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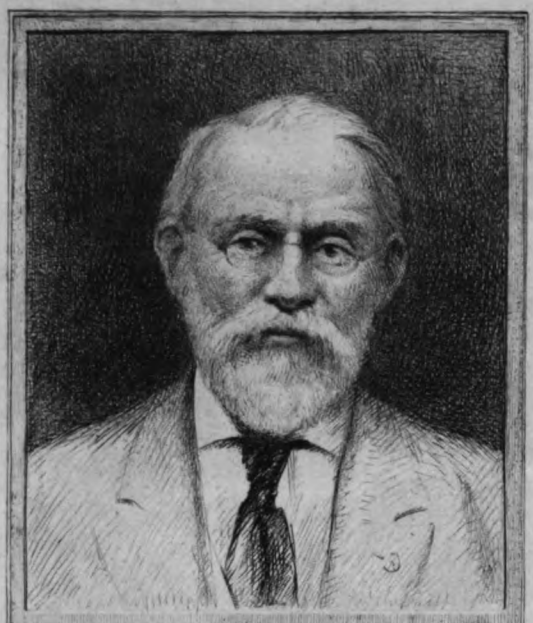
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Vol. LIV JANUARY, 1924 No. 234

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The Journal of the United Service Institution of India



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Reviews.

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United Service Institution of India.

RULES OF MEMBERSHIP.

All officers of the Royal Navy, Army, Royal Air Force, Colonial Forces, and of the Auxiliary Force, India, and Gazetted Government Officers shall be entitled to become members without ballot, on payment of the entrance fee and annual subscription.

The Council shall have the power of admitting as honorary members the members of the Diplomatic Corps, foreign naval and military officers, foreigners of distinction, other eminent individuals, and benefactors to the Institution, not otherwise eligible to become members.

Life Members of the Institution shall be admitted on the following terms:—

Rupees 75 + entrance fee (Rs 10) = Rs. 85.

Ordinary members of the Institution shall be admitted on payment of an entrance fee of Rs. 10 on joining, and an annual subscription of Rs. 10, *to be paid in advance*. The period of subscription commences on 1st January.

Subscribing members of the Royal United Service Institution, Whitehall, London, are not liable for entrance fee while the affiliation rules are in force.

Life members receive the Journal of the Institution post free anywhere, but ordinary members only in India. All members may obtain books from the library on paying V.-P. postage.

Honorary Members shall be entitled to attend the lectures and debates, and to use the premises and Library of the Institution without payment: but should they desire to be supplied with the Journal, an annual payment of Rs. 10, *in advance*, will be required.

Divisional, Brigade and Officers' Libraries, Regimental Messes, Clubs, and other subscribers for the Journal, shall pay Rs. 10 per annum.

Sergeants' Messes and Regimental Libraries, Reading and Recreation Rooms shall be permitted to obtain the Journal on payment of an annual subscription of Rs. 8.

If a member fails to pay his subscription for any financial year (ending 31st December) before the 1st June in the following year, a registered notice shall be sent to him by the Secretary inviting his attention to the fact. If the subscription is not paid by 1st January following his name shall be posted in the Reading Room for six months and then struck off the roll of members.

Members joining the Institution on or after the 1st October, will not be charged subscription on the following 1st January, unless the Journals for the current year have been supplied.

Members are responsible that they keep the Secretary carefully posted in regard to changes of rank and address. Duplicate copies of the Journal will not be supplied free to members when the original has been posted to a member's last known address, and not been returned by the post.

Members or Subscribers to the Journal, intimating a wish to have their Journals posted to any address out of India, shall pay in advance Rupee 1 per annum, to cover foreign postage charges, but Life Members who have left India shall not be liable for foreign postage on Journals.

All communications shall be addressed to the Secretary, United Service Institution of India, Simla.

Contributions to the Journal.

All papers must be written in a clear, legible hand, and only on one side of the paper. All proper names, countries, towns, rivers, etc., must, when in manuscript, be written in capital letters. All plans must have a scale on them.

Contributors are responsible, when they send articles containing any information which they have obtained by virtue of their official positions, that they have complied with the provisions of A. R. I., Vol. II., para. 204, and King's Regulations, para. 453.

Anonymous contributions under a *nom-de-guerre* will not be accepted or acknowledged; all contributions must be sent to the Secretary under the name of the writer and the paper will, if accepted, be published under that name unless a wish is expressed for it to be published under a *nom-de-guerre*. The Executive Committee will decide whether the wish can be complied with.

The Committee reserve to themselves the right of omitting any matter which they consider objectionable. Articles are only accepted on these conditions.

The Committee do not undertake to authorise the publication of such papers as are accepted, in the order in which they may have been received.

Contributors will be supplied with three copies of their paper *gratis*, if published.

Manuscripts of original papers sent for publication in the Journal will not be returned to the contributor, unless he expresses a wish to have them back and pays the postage.

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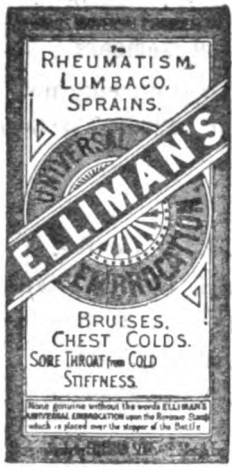
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United Service Institution of India.

JANUARY, 1924.

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I.—New Members.

The following new members joined the Institution from 28th August 1923 to 1st December 1923:—

Life Members.

Capt. L. M. Combe.
Capt. H. Peake-Cottam.
Lieut. S. B. S. Roy.
Capt. W. M. Tate.
Capt. A. G. MacGowan.
F.-Lieut. F. L. B. Hebbert.
Capt. F. H. Maltby.
Major J. H. Edmond.
Lieut. G. S. Shepley.
Lieut. K. M. Cariappa.

Ordinary Members.

A. R. Kent, Esq.
Lieut. S. J. A. Longley.
Lieut. N. E. L. Pearse.
Major M. Rawlence.
F.-Lieut J. G. Walser.
Col. R. J. Collins.
Capt J E. Shearer.
Capt. A. H. Rootes.
Major H. F. Blackwood.
Col. W. H. Beach.
Capt. K. I Gourlay.
Capt. G. F. Campbell.
H. A. Steerwood, Esq.
Major R. B. Purcy Cust.
Capt. B. S. Challen.
Major A. J. Reynolds.
Capt. A. Rea.
Capt. T. R. Anderson.
Lieut. T. Rigby.
F. G. Griffith, Esq.
Capt. C. L. B. Duke.

II.—Examinations.

Books on military history and languages with dictionaries are available in the Library and the following list of books, which is complete in accordance with the War Office List, may be found useful for reference by officers, studying for promotion examinations or entrance to the Staff College.

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MILITARY HISTORY (SPECIAL PERIOD).

1. *The Campaign of the British Army in France and Belgium up to 20th November, 1914.*

A.—OFFICIAL ACCOUNT.

Sir John French's Despatches.

B.—OTHER BOOKS.

40 days in 1914, by General Maurice (new edition).
The Battle of the Marne, by G. H. Perris.
1914, by Viscount French.
General sketch of the European War, by Belloc.
The Great War, by Colonel Sedgwick.
My Memoirs, by Ludendorf.
Falkenhayn's Book.
Von Kluck's Book.
British Campaign in France, Flanders, by Conan Doyle, 1914.
Nelson's History of the War.
Ypres, by German General Staff.
Oxford pamphlets, August 1914. The Coming of the War, by S. Williamson.
Oxford pamphlets, August 1914, Nos. VII and X.
Times Documentary History of the War, Vol. V, Military, Part I.
Times Documentary History of the War, Vol. VIII, Part III.
Der Grobe Krieg Schlacht bei Mons.
Der Grobe Krieg Schlacht bei Longwy.

2. *The Palestine Campaign.*

A.—OFFICIAL ACCOUNT.

A brief record of the advance of the Egyptian Expeditionary Force, 1919.

B.—OTHER BOOKS.

Allenby's Final Triumph, by W. T. Massey.
How Jerusalem was won, by W. T. Massey.

3. *Organisation of Army since* 1868.

A.—ORGANIZATION OF ARMY SINCE 1868.

History of British Army, by Fortescue.
Outline of Development of British Army, by Genl. Anderson.
Our Fighting Services, by Sir Evelyn Wood.

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B.—Forces of the Empire.

The Statesman's Year Book.

Army List.

Articles in Newspapers and Magazines, *viz.*, R. U. S. I.

Army Quarterly, Journal of the U. S. I. of India, etc.

4. *Development and constitution of the British Empire.*

A.—The British Empire.

Encyclopædia Britannica—(contains much concentrated information).

The Statesman's Year Book.

Whitaker's Almanack.

The Colonial Office List.

The British Empire and its History, by E. G. Hawke.

The Government of the British Empire, by Jenks, 1918.

The British Empire (6 lectures) by Sir C. P. Lucas, 1918.

The foundation and growth of the British Empire, by J. A. Williamson, 1918.

The beginnings of English Overseas Enterprise, by Sir C. P. Lucas, 1917.

The Government of England, by L. A. Lowell, 1912.

The Expansion of the British Empire, by W. H. Woodward, 1900.

Overseas Britain, by E. F. Knight, 1907.

The origin and growth of the English Colonies and of their system of Government, by H. E. Egerton, 1903.

A short History of Politics, by Jenks, 1900.

The English Constitution, by Bagehot, 1909.

The Expansion of England, by Sir J. Seely, 1883.

Introduction of the study of the law of the Constitution, by A. V. Dicey, 1908.

England in the Seven Years' War, Sir J. Corbett, 1907.

Selected Speeches and Documents on British Colonial Policy, 2 Vols., A. B. Keith, 1918.

B.—Books on Special Portions of the Empire or World.

The Rise and Expansion of British Dominions in India, by Sir A. C. Lyall, 1894.

A brief history of the Indian Peoples, by Sir W. H. Hunter, 1907.

The Nearer East, by Hogarth, 1902.

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Modern Egypt, by Cromer, 1908.

The History of Canada, by W. L. Grant.

Nova Scotia, by B. Wilson, 1911.

Report on British North America, by Sir C. P. Lucas.

The Union of South Africa, by R. H. Brand, 1909.

Short History of Australia, by E. Scott.

History of the Australasian Colonies, by Jenks, 1912.

The English in the West Indies, by J. A. Froude, 1888.

The Lost Possessions of England, by W. F. Lord, 1896.

5. *Military Geography.*

Naval and Military Geography of the British Empire, by Dr. Vaughan Cornish, 1916.

Outlines of Military Geography, by Col. A. C. Macdonnel, 1911.

Introduction of Military Geography, by Col. E. S. May.

Imperial Defence, by Col. E. S. May.

Britain and the British Seas, by H. J. Makinder, 1907.

Military Geography, by Macguire.

Imperial Strategy, by Repington.

War and the Empire, by H. Foster.

Historical Geography of British Colonies (Dominions), 7 Vols., by Sir C. P. Lucas, 1906—17.

Vol. 1, Mediterranean.
Vol. 2, West Indies.
Vol. 3, West Africa.
Vol. 4, South Africa.
Vol. 5, Canada.
Vol. 6, Australia.
Vol. 7, India.

The Influence of Sea Power on History, by A. I. Mahan, 1890.

Historical Geography of the British Empire, by Hereford George.

The Mastery of the Pacific, by A. R. Colquhoun, 1902.

Frontiers, by C. B. Fawcett, 1918.

III.—Payment for Articles in the Journals.

Articles accepted for publication in the Journal are paid for, and a sum of approximately Rs. 400 is awarded for articles and reviews published in each Quarterly Journal.

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IV.—Contributions to the Journal.

Articles submitted for publication must be typed in *duplicate.* With reference to Army Regulations, India, Volume II, paragraph 204 and King's Regulations, paragraph 453, as amended by Army Order 340 of 1913, action to obtain the sanction of His Excellency the Commander-in-Chief to the publication of any article in the Journal of the United Service Institution of India will be taken by the Committee.

Instructions for the preparation of drawings and plans for reproduction by lithography.

These should be in *jet* black. No washes nor ribands of colour should on any account be used.

If it is absolutely necessary to use colour (and these are only permissible in line work or names) the following will reproduce photographically, *i.e.*:—

Dark red, dark orange, dark green. No other colour should on any account be used.

V.—Library Rules.

1. The Library is only open to members and honorary members of the United Service Institution of India, members are requested to look upon books as not transferable to their friends.

2. No book shall be taken from the Library without making the necessary entry in the register. Members residing permanently or temporarily in Simla are requested to enter their addresses.

3. The United Service Institution of India is open all the year round—including Sundays—from 9 A.M. until sunset. Books may be taken out at any time provided Rule 2 is complied with.

4. A member shall not be allowed, at one time, more than three books or sets of books.

5. Papers, magazines, "works of reference" or books marked "Not to be taken away," or noted as "Confidential" may not be removed.

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6. No particular limit is set as to the number of days for which a member in Simla may keep a book, the Council being desirous of making the library as useful as possible to members; but if after the expiration of a fortnight from date of issue it is required by any other member it will be re-called.

7. Applications for books from members at out-stations are dealt with as early as possible, and books are despatched per Registered V.-P. P. They must be returned carefully packed per Registered Parcel Post within one month of date of issue, or application made for permission to retain them for a further period. This will always be granted unless the book is required by another member.

8. If a book is not returned at the end of four months, it must be paid for without the option of return, if so required by the Executive Committee.

9. Lost and defaced books shall be replaced at the cost of the member to whom they were issued. In the case of lost books which are out of print the value shall be fixed by the Executive Committee, and the amount, when received, spent in the purchase of a new book.

10. The issue of a book under these rules to any member implies the latter's compliance with the rules, and the willingness to have them enforced, if necessary, against him.

11. A list of all books presented and purchased and also a list of books useful to members studying for the Staff College and promotion examinations will be found, under Secretary's Notes, in the quarterly issue of the U. S. I. Journal. Members are invited to note any books which they think might with advantage be procured for the Institution. The suggestions will be placed before the Secretary.

12. Members are invited to contribute presents of books, maps, and photographs of naval and military interest. These may be addressed to the Secretary, U. S. I. of India, Simla. They will be duly acknowledged.

VI.—Library Catalogue.

Under Revision. The new catalogue will be available early in 1924.

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VII.—Gold Medal Prize Essay.

GOLD MEDAL PRIZE ESSAY COMPETITION, 1923-24.

The Council have chosen as the subject for the Gold Medal Essay for 1923-24 the following:—

"THE DEVELOPMENTS WHICH HAVE TAKEN PLACE IN THE ARMY HAVE GREATLY INCREASED THE WORK INVOLVED IN ITS ADMINISTRATION: IN WHAT DIRECTIONS CAN THIS ADMINISTRATION WORK BE SIMPLIFIED, AND REDUCED TO A MINIMUM, ESPECIALLY FROM A REGIMENTAL STANDPOINT, WITH A VIEW TO GIVING GREATER OPPORTUNITY FOR IMPROVING THE EFFICIENCY OF THE ARMY IN ITS TRAINING FOR WAR."

The following are the conditions of the competition:—

(1) The competition is open to all gazetted officers of the Civil Administration, the Royal Navy, Army, and Royal Air Force or Auxiliary Force who are members of the U. S. I. of India.

(2) Essays must be printed or type-written and submitted in *triplicate.*

(3) When a reference is made to any work, the title of such work is to be quoted.

(4) Essays are to be *strictly anonymous.* Each must have a motto, and enclosed with the essay, there should be sent a *sealed* envelope with the motto written on the outside and the name of the competitor inside.

(5) Essays will not be accepted unless received by the Secretary on or before the 30th June 1924.

(6) Essays will be submitted for adjudication to 3 judges chosen by the Council. When the decisions of the 3 judges are received the Committee will submit the four essays, placed first in order by the judges, with their recommendations on the award of the Gold Medal to the Council, who will decide whether the Medal is to be awarded and whether the essay be published.

(7) The name of the successful candidate will be announced at a Council Meeting to be held in September or October 1924.

(8) All essays submitted are to become the property of the United Service Institution of India, *absolutely* and authors will not be at liberty to make any use whatsoever of their essays without the sanction of the Council.

(9) Essays should not exceed about 15 pages of the size and style of the Journal exclusive of any appendices, tables or maps.

By order of the Council,

SIMLA :
27th August 1923.

H. G. MARTIN, MAJOR, R.A.,
Secretary, U. S. I. of India.

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VIII.—Army List pages.

The U. S. I. is prepared to supply members and units with manuscript or type-written copies of Indian Army List pages, at the following rate :—

Type-written, per page, Rs. 2.

IX.—List of books purchased.

NEW BOOKS.

Title.	*Published.*	*Author.*
Official History of Australia in the War of 1914—18, Vol. VIII.	1923	F. M. Cuttack.
The Fighting Ships and their work.	1923	E. S. Bellasis.
Science of Infantry Tactics Simplified.	1923	L. Hart.
Defence of India	1923	A. Vincent.
Life and Letters of Sir John Moore	1923	Beatrice Brownrigg.
Mark Sykes, his Life and Letters	1923	Shane Leslie.
Forty Years a Soldier ...	1923	Maj.-Genl. Sir G. Younghusband.
Le Massacre de Notre Infanterie, 1914—18.	1923	Genl. Percin.
1914 Les Erreurs du Haut Commandement.	1923	Do.
Tales of Nasr-ed-din Khoja ...	1923	Translated by H. D. Barnham.
Adventures in the Near East, 1918—22.	1923	Lt.-Col. A. Pawlinson.

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Title.	*Published.*	*Author.*
The Land of Three Faiths ...	1923	P. Graves.
National Policy and Naval Strength.	1923	Rear-Admiral H. W. Richmond.
Report of the Indian Army Committee, 1919-20.	1920	"Official."
If Britain is to Live ...	1923	N. Angell.
Military Organization and Administration.	1923	Major W. G. Lindsell.
America and the Atlantic ...	1923	Vice-Admiral G. A. Ballard.
A Land of Opportunities ...	1923	E. J. Stuart.
The Triumph of Unarmed Forces, 1914—18.	1923	Rear-Admi. M. W. W. P. Consett and Capt. O. H. Daniel.
A Short History of the Near East	1923	W. S. Davis.
Recommendations of the National and Imperial Defence Committee.	1923	"Official."
History of the British Army, Vol. XI.	1923	Hon'ble J. W. Fortescue.
All in a Lifetime	1923	H. Morgenthau.
Extract from the report of the Experimental Brigade, Aldershot, 1922.	1923	"Official."
The Empire at War (Vol. II) ...	1923	Sir C. Lucas.
King's Regulations for the Army and the Army Reserve.	1923	"Official." H. M. S. O.

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Title.	Published.	Author.
Notes on Land Forces of the British Dominions Colonies, and Land Protectorates.	1922	"Official."
The Expansion of Britain ...	1922	W. R. Kermack.
Elements of Railway Economics...	1922	Acworth.
The Western Question in Greece and Turkey.	1922	A. J. Toynbee.
Joffre et Lanrezac	1922	Jules Isaac.
A History of Arabia... ...	1922	D. G. Hogarth.
A History of Persia... ...	1922	Sir P. Sykes.
The Partition and Colonisation of Africa.	1922	Sir C. Lucas.
Notes on Infantry Tactics and Training (Revised Edition).	1922	Lt.-Genl. M. Harper
Report on the Staff Exercises held by the C. I. G. Staff.	1922	"Official."
Influence of the Sea on Japan ...	1921	Vice-Admiral G. A. Ballard.
Babylonian Wisdom ...	1921	S. Langdon.
Indian Frontier Organization ...	1920	Pioneer Press.
Aerial Transport	1920	G. H. Thomas.
Economic History of England ...	1916	H. O. Meredith.
Historical Geography of the Holy Land.	1896 (Reprint).	G. A. Smith.
Aircraft Warfare	1916	F. W. Lanchester

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Title	*Published.*	*Author.*
Notes on Airships for Commercial Purposes.	1918	"Official" (Air Ministry).
Sea-Power in the Pacific ...	1921	H. C. Bywater.

Books Presented.

Title.	*Published.*	*Presented by.*
Babylonian Problems ...	1923	Author (Lt.-Col. W. H. Lane).
The Life and Letters of Sir John Moore.	1923	Author (Lady Beatrice Brownrigg).
Military Organization and Administration.	1923	Gale and Polden, Aldershot. (Author Major W. L. Lindsell).

The Genesis of the War	Asquith.
Annual Report on the Progress of Civil Aviation, March 1923.	"Official."
Report of the Civil Aviation Advisory Board on Imperial Air Mail Services,	"Official."

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Secretary's Notes.

Title.	*Author.*
The German Air Force in the Great War	Neumann.
Deutschlands Krieg in der Luft ...	Hoepnerr.
L'Aeronautique	Comdt. Ortlieb.
The History of 24th Squadron ...	Illingworth.
The History of 60th Squadron, R. A. F....	Scott.
The History of 99th Squadron ...	Pattinson.
The Annals of 100th Squadron ...	Burge.
Air Raid Damage in London ...	Monson.
Reflexions Sur L'Art de la Guerre ...	Serrigny.
The World Crisis, Vol. II	W. Churchill.
German Strategy in the Great War ...	P. Neame.
Stray Recollections (2 Vols.) ...	Callwell.
Tales of Travel	Lord Curzon.
Wild Animals in Central India ...	Dunbar Brander.

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Prize Essay Gold Medallists.

(With rank of Officers at the date of the Essay.)

1872..Roberts, Lieut-Col. F. S., v.c , c.b., r.a.
1873..Colquhoun, Capt. J. S., r.a.
1874..Colquhoun, Capt. J. S., r.a.
1879..St. John, Maj. O. B. C., r.e.
1880..Barrow, Lieut. E. G., 7th Bengal Infantry.
1882..Mason, Lieut. A. H., r.e.
1883..Collen, Maj. E. H. H., s.c.
1884..Barrow, Capt. E. G., 7th Bengal Infantry.
1887..Yate, Lieut. A. C., 27th Baluch Infantry.
1888..Maude, Capt. F. N., r.e.
Young, Maj. G. F., 24th Punjab Infantry (specially awarded a silver medal).
1889..Duff, Capt. B., 9th Bengal Infantry.
1890..Maguire, Capt. C. M., 2nd Cav., Hyderabad Contingent.
1891..Cardew, Lieut. F. G., 10th Bengal Lancers.
1893..Bullock, Maj. G. M., Devonshire Regiment.
1894..Carter, Capt. F. C., Northumberland Fusiliers.
1895..Neville, Lieut.-Col. J. P. C., 14th Bengal Lancers.
1896..Bingley, Capt. A. H., 7th Bengal Infantry.
1897..Napier, Capt. G. S. F., Oxfordshire Light Infantry.

All members are hereby informed that, owing to the failure of the Alliance Bank of Simla Ltd., the bankers of the Institution are now Messrs. Lloyd's Ltd. (Cox's and King's Branch), Simla. Members are requested to alter their standing instructions with their bankers accordingly.

1908..Jeudwine, Maj. H. S., r.a.
1909..Molyneux, Maj. E. M. J., d.s.o., 12th Cavalry.
Elsmie, Maj. A. M. S., 56th Rifles, F. F. (specially awarded a silver medal).
1911..Mr. D. Petrie, m.a., Punjab Police.
1912..Carter, Maj. B. C., The King's Regiment.
1913..Thomson, Maj. A. G., 58th Vaughan's Rifles (F.F.).
1914..Bainbridge, Lieut.-Col. W. F., d.s.o., 51st Sikhs (F.F.).
Norman, Maj. C. L., m.v.o., q.v.o., Corps of Guides (specially awarded a silver medal).
1915..No Award.
1916..Crum, Maj. W. E., v.d., Calcutta Light Horse.
1917..Blaker, Maj. W. F., r.f.a.
1918..Gompertz, Capt. A. V., m.c., r.e.
1919..Gompertz, Capt. M. L. A., 108th Infantry.
1920..Keen, Lt.-Col. F. S., d.s.o., 2/15th Sikhs.
1921..No Award.
1922..Martin, Maj. H. G., d.s.o., o.b.e., r.f.a.
1923..Keen, Colonel F. S., d.s.o., i.a.

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MacGREGOR MEMORIAL MEDALS.

1. The Macgregor Memorial Medal was founded in 1888 as a memorial to the late Major-General Sir Charles MacGregor. The medals are awarded for the best military reconnaissances or journeys of exploration of the year.

2. The following awards are made annually in the month of June:—

(*a*) For officers—British or Indian—silver medal.

(*b*) For soldiers—British or Indian—silver medal, with Rs. 100 gratuity.

3. For specially valuable work a gold medal may be awarded in place of one of the silver medals, or in addition to the silver medals, whenever the administrators of the fund deem it desirable. Also the Council may award a special additional silver medal, without gratuity, to a soldier, for special good work.

4. The award of medals is made by His Excellency the Commander-in-Chief as Vice-Patron, and the Council of the United Service Institution who were appointed administrators of the Fund by the MacGregor Memorial Committee.

5. Only officers and soldiers belonging to the Army in India (including those in civil employ) are eligible for the award of the medal.*

6. The medal may be worn in uniform by Indian soldiers on ceremonial parades, suspended round the neck by the ribbon issued with the medal

Note.

(*i*) Personal risk to life during the reconnaissance or exploration is not a necessary qualification for the award of the medal; but in the event of two journeys being of equal value, the man who has run the greater risk will be considered to have the greater claim to the reward.

(*ii*) When the work of the year has either not been of sufficient value or has been received too late for consideration before the Council Meeting, the medal may be awarded for any reconnaissance during previous years considered by His Excellency the Commander-in-Chief to deserve it.

MacGregor Memorial Medalists.

(With rank of officers at the date of the Award.)

1889..BELL, Col. M. S., V.C., R.E. (specially awarded a gold medal).

1890..YOUNGHUSBAND, Capt. F. E., King's Dragoon Guards.

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* N.B.—The terms "officer" and "soldier" include those serving in the British and Indian armies and their reserves, also those serving in Auxiliary Forces, such as the Volunteers and Corps under Local Governments, Frontier Militia, Levies and Military Police, also all ranks serving in the Imperial Service Troops.

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MacGregor Memorial Medalists—*(contd.)*.

1891..Sawyer, Major H. A., 45th Sikhs.
Ramzan Khan, Havildar, 3rd Sikhs.
1892..Vaughan, Capt. H. B., 7th Bengal Infantry.
Jaggat Singh, Havildar, 19th Punjab Infantry.
1893..Bower, Capt. H., 17th Bengal Cavalry (specially awarded a gold medal).
Fazaldad Khan, Dafedar, 17th Bengal Cavalry.
1894..O'Sullivan, Major G. H. W., R.E.
Mull Singh, Sowar, 6th Bengal Cavalry.
1895..Davies, Capt. H. R., Oxfordshire Light Infantry.
Ganga Dyal Singh, Havildar, 2nd Rajputs.
1896..Cockerill, Lieut. G. K., 28th Punjab Infantry.
Ghulam Nabi, Sepoy, Q. O. Corps of Guides.
1897. Swayne, Capt. E. J. E., 16th Rajput Infantry.
Shahzad Mir, Dafedar, 11th Bengal Lancers.
1898..Walker, Capt. H.B., Duke of Cornwall's Light Infantry.
Adam Khan, Havildar, Q. O. Corps of Guides.
1899..Douglas, Capt. J. A., 2nd Bengal Lancers.
Mihr Din, Naik, Bengal Sappers and Miners.
1900..Wingate, Capt. A. W. S., 14th Bengal Lancers.
Gurdit Singh, Havildar, 45th Sikhs.
1901..Burton, Maj. E. B., 17th Bengal Lancers.
Sundar Singh, Colour Havildar, 31st Burma Infantry.
1902..Ray, Capt. M. R. E., 7th Rajput Infantry.
Tilbir Bhandari, Havildar, 9th Gurkha Rifles.
1903..Manifold, Lieut.-Col. C. C., I.M.S.
Ghulam Hussain, Lance-Dafedar, Q. O. Corps of Guides.
1904..Fraser, Capt. L. D., R.G.A.
Moghal Baz, Dafedar, Q. O. Corps of Guides.
1905..Rennick, Maj. F., 40th Pathans (specially awarded gold medal).
Madho Ram, Havildar, 8th Gurkha Rifles.
1906..Shahzada Ahmad Mir, Risaldar, 36th Jacob's Horse.
Ghafur Shah, Lance-Naik, Q. O. Corps of Guides Infantry.
1907..Nangle, Capt. M. C., 92nd Punjabis.
Sheikh Usman, Havildar, 103rd Mahratta Light Infantry.
1908..Gibbon, Capt. C. M., Royal Irish Fusiliers.
Malang, Havildar, 56th Punjab Rifles.
1909..Muhammad Raza, Havildar, 106th Pioneers.

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MacGregor Memorial Medalists—(*concld.*).

1910..Sykes, Maj. P. M., C.M.G., late 2nd Dragoon Guards (specially awarded a gold medal).
Turner, Capt. F. G., R.E.
Khan Bahadur Sher Jung, Survey of India.
1911..Leachman, Capt. G. E., The Royal Sussex Regiment.
Gurmukh Singh, Jemadar, 93rd Burma Infantry.
1912..Pritchard, Capt. B. E. A., 83rd Wallahjabad Light Infantry (specially awarded a gold medal).
Wilson, Lieut. A. T., C.M.G., 32nd Sikh Pioneers.
Mohibulla, Lance-Dafedar, Q. V. O. Corps of Guides.
1913..Abbay, Capt. B. N., 27th Light Cavalry.
Sirdar Khan, Sowar, 39th (K.G.O.) Central India Horse.
Waratong, Havildar, Burma Military Police (specially awarded a silver medal).
1914..Bailey, Capt. F. M., I.A. (Political Dept.).
Morshead, Capt. H. T., R.E.
Haidar Ali, Naik, 106th Hazara Pioneers.
1915..Waterfield, Capt. F. C., 45th Rattray's Sikhs.
Ali Juma, Havildar, 106th Hazara Pioneers.
1916..Abdur Rahman, Naik, 21st Punjabis.
Zarghun Shah, Havildar, 53th Rifles (F.F.) (specially awarded a silver medal).
1917..Mian Afraz Gul, Sepoy, Khyber Rifles.
1918..Nobl, Capt. E. W. C. (Political Department).
1919..Keeling, Lt.-Col. E. H., M.C., R.E.
Alla Sa, Jemadar, N.-E. Frontier Corps.
1920..Blacker, Capt. L. V. S., Q. V. O. Corps of Guides.
Awal Nur, C. Qm. Havildar, 2nd Bn., Q. V. O. Corps of Guides. (Special gratuity of Rs. 200.)
1921..Holt, Major A. L., Royal Engineers.
Sher Ali, Sepoy No. 4952, 106th Hazara Pioneers.
1922..Abdul Samad Shah, Capt., O.B.E., 31st D. C. O. Lancers.
Nur Muhammed, Lance-Naik, 1st Guides Infantry, F. F.
1923..Bruce, Capt. J. G., 2/6th Gurkha Rifles.
Sohbat, Head Constable, N.-W. F. Police.
Hari Singh Thapa, Survey Department.

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H. G. MARTIN,
MAJOR, R.A.,
Secretary, United Service Institution of India.

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The Journal

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EDITORIAL.

On the European situation feeling at present runs so high that no review of it can hope to be universally acceptable. There are, however, certain aspects of the situation to which we shall briefly refer. British and French policy have one common object; the extraction from Germany of the maximum possible sum in Reparations. On the basis of this premise, it is interesting to recall General Smuts' speech of 23rd October. This speech, General Smuts was careful to emphasise, was an expression of his own views alone. Still, it will be generally admitted that his views are worth listening to—the more so as he had been present at the Versailles Conference, and at the recent secret sessions of the Imperial Conference devoted to the discussion of foreign policy and Imperial defence. General Smuts, then, holds that "For the present the Ruhr occupation bars the way to Reparations." So much, in his opinion, for the existing situation as it affects the common object of British and French policy. Into his proposed remedies it is needless to enter; they will be fresh in every memory. It may be noted, however, that General Smuts endorsed

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Lord Curzon's statement that the original total of £ 6,000,000,000 claimed from Germany is in her present condition "a quite impossible sum." This has been the contention of the British member of the Reparations Commission for some time, as of the late Mr. Bonar Law, and of other authorities including of course Professor Keynes as far back as 1920. Finally General Smuts reminded his hearers that our interests are not wholly commercial and financial; there is a third aspect. "If things continue on their present lines," he warned them, "this country will soon have to start re-arming herself in sheer self-defence." This, be it remembered, is the warning of a statesman who has recently reaffirmed his profession of faith in the League of Nations as his sole hope for the future of Europe.

Dr. Cuno in his recent book *Der Kampf um die Ruhr* presents yet another aspect of the problem. His argument is this. At the time of the Armistice, not only had Germany suffered complete defeat in the field; she stood morally condemned at the bar of the civilised world. And her people had forfeited all sense of national honour. But for four years since the Armistice the German people has been refined by the relentless persecution of France. And of this four years of travail have been reborn their sense of national honour and a spirit of self-sacrifice. Morally, the relative situations of France and Germany are now reversed; it is France who now stands isolated by her own acts. This of course is the opinion of a German; but it is interesting in that it reveals the recrudescence of German nationality as a factor increasingly to be reckoned with. The lessons of Jena and Leipsic, of 1870-1 and 1914, are obvious.

Of the decisions of the Imperial Conference on defence policy very little has been made public. But it seems that the question has been approached from the naval standpoint—perhaps somewhat to the exclusion of the two other Services. Imperial defence is, of course, primarily a naval matter. But the rôle and requirements of the land forces must not be lost sight of. Military

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retrenchment has been even more drastic in the Dominions than it has been at home. Permanent establishments are generally lower than they were before the war, while resources in war-trained personnel are rapidly decreasing. The question of Empire co-operation by all three Services is essentially one for careful investigation by a Committee of Imperial Defence, comprising members from the Dominions.

A defence matter which has not perhaps excited the general attention it deserves is the question of the future status of Tangier. Ever since the inauguration of the Anglo-French Entente in 1904, the Foreign Office has consistently adhered to the policy of neutralisation and the Open Door; Tangier must by reason of its strategic situation at the mouth of the Mediterranean be under international control. This principle was repeatedly reaffirmed; both France and Spain are supposed to have given solemn agreements to it; and negotiations for internationalisation were actually in progress in 1914. Since the war, however, the French attitude has changed. France maintains, or at least maintained, that an International Municipality for the actual town of Tangier meets all requirements, while the surrounding country should be directly administered by the Sultan of Morocco—an arrangement tantamount to administration by France in view of her protectorate. The divergence of views was so great that a conference of experts, British, French and Spanish, was recently assembled in an attempt to find a basis of agreement; on which basis a subsequent full conference would draw up a convention. This preliminary conference is believed to have reached a satisfactory understanding.

The importance of Tangier is sufficiently obvious. Since the disappearance of Germany, the Mediterranean has once again become the centre on which our battle fleet is based, whence it must be free to operate as occasion demands. Now Tangier harbour is an excellent submarine base, there are unlimited facilities for aerodromes and concealed artillery positions in the vicinity, and the fairway through the Straits is only eight miles

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wide at the narrowest point; while Gibraltar—our only base within radius of effective aircraft action—lies thirty miles to the Eastward where the Straits are fifteen miles across, and is devoid of ground suitable for aerodromes. Tangier, in fact, commands the Straits of Gibraltar more effectively than does Gibraltar itself. As a writer in *Saturday Review* recently remarked: Tangier in enemy hands "cuts the British Empire in two."

Captain Williams' paper* in this number of the *Journal* describes from the standpoint of the troops the climax of the drama to which the new volume of Mr. Churchill's reminiscences provides a commentary from the standpoint of the politician and amateur strategist. And an intensely interesting commentary it is, however much we may disagree with certain of Mr. Churchill's conclusions. Mr. Churchill was wholly opposed to the Western school with its creed of "killing Germans." He favoured more picturesque expedients-of the type described by Callwell in his "Experiences of a Dug-out." In spring 1915, Mr. Churchill maintains, the power of manœuvre still existed. We might have turned the Northern enemy flank by arraying the Dutch and Danish peoples on our side. Certainly, had this combination been practicable, the results might well have been decisive: the blockade would then have been complete, and the "triumph of unarmed force" impossible. But was it practicable?—with the guarantees which we could offer.

Mr. Churchill is even more emphatic of the possibilities of the Southern flank: a combination of Greece, Bulgaria and Roumania. This latter combination, if indeed it could have been effected, at least proved beyond the skill of Allied diplomacy. But at the beginning of January 1915, in response to Russia's appeal for relief from Turkish pressure in the Caucasus, we found ourselves committed to action of some sort or other in this quarter. And from a naval demonstration we drifted into a first class campaign. Mr. Churchill makes the following comment on the

*The Landing of the 29th Division at Gallipoli.

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almost involuntary change in the scope of operations: "To drift into a new campaign piecemeal and without any definite decision and careful plan would have been scouted by everyone. Yet so obliquely were these issues presented, so baffling were the personal factors involved, that the Council was drawn insensibly and irresistibly into the gulf." A stronger argument would be hard to find for the creation of a Combined Staff—be its mouth-piece what you will, so long as it presents a clear-cut issue.

It is of melancholy interest that, had effect been actually given to the War Council decision of 16th February 1915—to despatch forthwith the 29th Division and a force from Egypt to support the Navy—the Dardanelles were ours for the asking. The first successful naval bombardments took place on 24th and 26th February, by which latter date the 29th Division might have been concentrated at Lemnos. And, according to Liman von Sanders in his *Fünf Jahre Turkei*, throughout the period 20th February to 1st March the Turks were determined to abandon the Straits in the event of an enemy landing.

But surely the crisis of the campaign was the Russian Ambassador's announcement of 3rd March. M. Venezelos had proposed that three Greek divisions should co-operate in the Gallipoli operations. The Tsar—apparently jealous for Russia's claim to Constantinople—actually vetoed Greek co-operation. Thus might a drowning man refuse a life-belt because he objected to its colour-scheme.

A modification in the rules of the Prize Essay competition has been introduced by the Council of the United Service Institution in the hope of attracting more competitors. In addition to the gold medal when awarded, the winner will in future receive a grant of Rs. 150. This may not appear a very generous award when compared with the money grants given to the winners of similar competitions at home. But it must be remembered that the money rewards given for the winning essays of the *R U. S. I. Journal* and the *Army Quarterly* are the outcome of endowments. The United Service Institution of India still awaits its endowment for this purpose.

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Also, the Council is of opinion that the subjects chosen for prize essays of late years have unduly favoured the staff, as opposed to the regimental officer. This year's subject has been deliberately chosen to encourage the regimental officer to write. Reduction of office-work is, of course, a matter of supreme importance. After all, it is the army's duty to fight; and endless office-work to the preclusion of training, while it may produce a body of excellent babus, does not tend to success in the field. The Council hopes, therefore, for constructive criticism of the present system: training for war is the goal *but* the army must still be administered. Some people hold that reports and returns are manufactured by the staff for their own delectation. This is rarely the case. But the view is no new one. In the year of grace 1782 appeared a little volume entitled, "Advice to Officers of the British Army." The book is on the model of Swift's "Advice to Servants," and comprises letters of ironical advice to all and sundry—from Commanders-in-Chief to young officers. Needless to say it is anonymous. Very many passages might literally have been written to-day. We shall be content with quoting the following: it is addressed to "General* Officers on the Staff."

"Nothing shows a general's attention more than requiring a number of returns, particularly such as it is difficult to make out with any degree of accuracy. Let your Brigade-Major, therefore, make out a variety of forms, the more red lines the better: as to the information they convey that is immaterial; no one reads them, the chief use of them being to keep adjutants and serjeants in employment...."

The author's views on the burning questions of retrenchment and pay are equally refreshing and up-to-date. A delightful book—unearthed from the depths of the Institution library.

We announced in the October number that we hoped to provide tactical schemes in the reasonably near future. The announcement has been greeted by numerous applications. But the schemes

* Which as a matter of fact was at this period a general term, implying more actively employed.

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are not yet ready. The gridded maps have been obtained from home. And they have been distributed to all the recognised centres of military knowledge in India—in the profound hope that schemes, many and excellent, will be forthcoming. The Council has even offered pecuniary incentive. Now there is nothing for it but to watch and wait. Meanwhile the names of all applicants have been registered. Schemes will be sent out as soon as they are available—there is every chance that this will be in the near future.

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THE ACTION OF BAIT ISSAH (OR BEIT AIESSA). 12TH—19TH APRIL 1916.

By Major-General Sir W. D. Bird, K.B.E., C.B., C.M.G., D.S.O.

[This narrative is based on the War Diaries, to which I was most kindly permitted to have access.]

The immediate consequence of the reverse sustained by the British at the Battle of Hannah,* which was fought on the 21st January 1916, was that careful stock was at once taken by General Townshend of the supplies held by the inhabitants of Kut-al-Amarah. As a result he was able to telegraph by wireless to Lieutenant-General Sir Fenton Aylmer on the 24th January as follows: "I have 22 days' food left, but by collecting all the atta in the town and eating up the horses, we can last much longer....." On the next day Townshend announced that the garrison could hold out for a period of 84 days. Ample time, therefore, was still available in which to concert new measures for the relief of the place.

Meanwhile the Government of India had decided to meet the crisis caused by the failure of the Tigris Corps at Hannah by sending three additional infantry brigades, the 34th, 35th and 36th, and later the 41st and 42nd also, to the forces in Mesopotamia, now under the command of General Sir Percy Lake. The Government in England likewise subsequently authorised the despatch of a further reinforcement of the 13th (New Army) British Division from Egypt to Mesopotamia.

On account of the shortage of river transport for the movement of troops up the Tigris, only a portion of the first batch of these

* Account published in this *Journal* in October 1923.

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reinforcements had reached the Tigris Corps on the 8th March; when, owing principally to the imminence of the annual flooding of the Tigris, and to reports that the enemy might soon receive an accession of strength, the offensive was resumed by the British. General Aylmer then advanced up the right bank of the Tigris with a group of seven infantry brigades, a cavalry brigade and 68 guns; but his troops were repulsed in an attempt to carry the enemy's positions at the Dujailah redoubt, and Aylmer fell back again to Sannah. (Map 1.)

Sir Fenton Aylmer was now replaced in the command of the Tigris Corps by Lieutenant-General Sir G. F. Gorringe, and another period of preparation supervened before the attacks were renewed.

The long expected floods,* due to the melting of the snows in the Armenian and Persian highlands, came down on the 23rd March. The Suwaikiyah marsh soon began to encroach on the Turkish lines at Hannah, all canals except those whose mouths had been built up by means of dams were filled with water, and the river also overflowed its banks both above Kut-al-Amarah, near the Abu Rumman mounds and at Orah.

The situation as regards river transport, however, had at last somewhat improved, and early in April General Gorringe could therefore dispose of the 3rd, 7th, and 13th Divisions, and certain Corps Troops, a force amounting to 50 battalions, 17 squadrons and 127 guns on land, besides those in the warships, with a total fighting strength of about 37,000 men. As the resistance of the garrison of Kut-al-Amarah could not much longer be prolonged, Sir George now decided to make another attempt to force the enemy's lines at Hannah. These were held, it was thought, by about 14,000 fighting men with 32 guns; approximately an equal number were standing on the right bank of the Tigris, and in the main to the west of Bait Issah, direct communication

* As a rule during this season there are a series of spates followed by slight falls in the level of the water.

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between the two groups being maintained by means of a flying bridge, or ferry, at Magasis; and the blockade of Kut-al-Amarah was being effected by 5,000 men with from 20 to 30 guns, who were also guarding bridges over the Tigris at Shumran and Hai at Bassouia.

On the 5th April, while the 3rd Division remained on the right bank of the Tigris, the 13th Division, supported by the 7th Division, overran the lines at Hannah, which had practically been vacated by the Turks owing to fears lest the area should be submerged by the floods. A position at Falahiyah, stoutly held by a Turkish rear-guard, was then carried by the 13th Division after nightfall. Gorringe now attempted to rush another series of entrenchments at Sannaiyat before the enemy could settle firmly into them; but an assault made early on the 6th April by the 7th Division was not successful.

On the 9th April the 13th Division again attacked Sannaiyat at 4·45 A.M., but for the second time the British were repulsed.

On the right bank, where the enemy had meanwhile shown litte activity, the Tigris had caused sufficiently serious difficulties for the troops of the 3rd Division. Early on the 9th April an embankment, and causeway, that were being made to the north-east of the Abu Rumman Mounds for the purpose of checking the floods were breached. Soon after the 9th March the 3rd Division had regained the line between Abu Rumman and the Twin Canals, and subsequently had made more ground. At this time, therefore, the 8th Infantry Brigade was, with the 1/1st Gurkhas, between Crofton's Mound and the Abu Rumman Mounds; the 37th Infantry Brigade was to the south of the Abu Rumman Mounds, and there were five or six batteries behind the 8th and 37th Brigades. The 7th Infantry Brigade, supported by the Highland Light Infantry and 93rd Infantry of the 9th Infantry Brigade, carried the front southwards to within a couple of miles of the Umm-al-Brahm, the left of the line of its picquets being in touch with the 1/9th

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Gurkhas, who were at the Twin Canals with the 44th Battery and two squadrons of the 33rd Cavalry. In consequence of the inrush of water the main body of the 7th Infantry Brigade was now ordered to move behind the left of the 37th Infantry Brigade, but the units were to leave in position those picquets which were standing to the west of the Twin Canals.

At 1 P.M. the whole of the embankment gave way, and the water of the Tigris poured on to the plain soon spreading as far as the Umm-al-Brahm. By 10-45 P.M. direct communication from the rear had become impossible with the 8th and 37th Infantry Brigades and most of the Artillery, and carts from the advanced base at Wadi, loaded with provisions, could now not reach the troops except by moving round through the area to the west of the Umm-al-Brahm and outside the picquet line of the 7th Infantry Brigade; and even here the men of the picquets stood only on islands of dry land from which the water was kept by means of hastily constructed banks. Carting, however, soon ceased to be practicable, and it became necessary to forward supplies for the troops of the 3rd Division as far as possible up the Tigris in boats under cover of darkness; and the rations were then man-handled through the inundation to the various units, a slow, unsatisfactory and exhausting process.

The general situation at the front had now become so serious that Sir Percy Lake, who on the 5th April had established his advanced headquaters at Wadi, came forward on the 10th to Falahiyah to consult with General Gorringe. General Townshend's flour mill had ceased to work on the 8th April on account of lack of fuel, and although a sufficiency of flour had been ground to enable the troops to be fed up to the 15th April, it was evident that the garrison of Kut-al-Amarah, whose daily portion of meal had been reduced to 5 ounces per man, would shortly be faced with starvation.

The Tigris Corps had again experienced serious losses. The rength of the infantry of the 3rd Division was still 380 British

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and Indian officers and 8,800 other ranks, and the 35th and 36th Infantry Brigades, numbering in all about 170 British and Indian officers and 3,400 others, had not lately been engaged; but the infantry of the 13th Division could muster only about 160 officers and 6,500 others, and the 7th Division had also not more than about 270 British and Indian officers and 6,500 others in the ranks. The 41st Infantry Brigade from India had reached or was about to reach Shaikh Saad or Wadi, so that some 3,000 officers and men had been added to the force. Certain batteries had also come up during the recent fighting which raised the number of guns to 135*; but the total bayonet strength was not more than 28,000, of whom perhaps 23,000 or 24,000 would actually be available for fighting, after deducting men employed on guard duties, on transport and administrative work and those temporarily indisposed; and many of the units of the infantry were composed of amalgamations of battalions and drafts, and must therefore necessarily have been wanting in the all-important faculty of co operation. Further, so large a number of experienced officers had been disabled in the various attempts to reach Kut-al-Amarah, that the fighting efficiency of the corps in the attack, when leadership is essential for the attainment of success, had undoubtedly been lowered. (For order of battle see Appendix.)

The total number of British troops in Mesopotamia amounted to between 80,000 and 90,000, excluding men in hospital. But the river transport was still so far from being adequate for the needs of the force, that only about 1,200 to 1,500 drafts were actually on the way up the Tigris by steamer; 2,500 men, 32 guns and a quantity of transport were attempting to march to the front, but these had already been delayed, and would probably now be stopped by the floods.

According to the latest reports the Russian force which was advancing through Persia on Khanikin, more that 200 miles

* Two Naval 12-pounder anti-aircraft guns had in addition come in the Mantis.

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from Baghdad, consisted only of 5,000 sabres, 7,500 rifles, 28 guns and 26 machine guns. It was not likely, therefore, that these troops would be able to afford direct assistance to the British, but they would probably hold fast the Turkish formations that had been diverted to oppose them.

Thirty-two thousand rounds of artillery ammunition had already been expended by the British since the 5th April, but it does not seem that there was as yet any lack of shells. On the other hand there was a shortage of land transport at the front, and the supplies of food that were now available at Wadi would not suffice for the maintenance of the troops for more than 3 days. It was, therefore, not practicable to form local depôts on both banks of the Tigris from which the men and animals could be fed as required; and the flood waters could not be used for the dispatch of supplies in boats from Orah to and across the Umm-al-Brahm, owing to the fact that labour to undertake such deepening of the canals as would be necessary for this purpose was not available.

A situation is rarely, if ever wholly favourable or unfavourable only for one side, and if the British had suffered serious casualties the Turks must also have experienced losses in the recent actions; but from the nature of the fighting, and since a counter-attack had not been launched by the enemy, it was probable that their casualties had been less than those of the British. A few days later, in fact, the British believed that round Kut-al-Amarah there were 5,200 men, belonging to the 45th Division and some newly arrived troops, with 21 guns; on the right bank below Kut it was thought that the Turks had now placed about 11,000 men with 35 guns, comprising the 35th and 2nd Divisions, two regiments of another division which was possibly the 1st, and one battalion of the 51st Division; on this bank there was also a cavalry brigade 1,500 strong; on the left bank there were about 12,500 infantry, 300 cavalry and 24 guns, and these belonged

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to the 51st and 52nd Divisions, and to another division which might be the 41st.

The arrival of the floods had no doubt caused difficulties for the Turks as regards transportation over land. But, owing to the character of the topography, they had been and would be tactically in favour of the defending side, unless General Gorringe could devise some means of turning the physical difficulties to his profit; for the inundations would limit mobility which is one of the advantages generally possessed by the side that attacks.

In spite of this limitation Sir Percy Lake apparently still hoped to win success through mobility, in preference to sapping slowly for 650 yards in bright moonlight towards the strong Sannaiyat position; which would at best occupy more time than the British could afford to spend, and an inundation might at any moment ruin all work that had been completed. Since a bridge had now been made by the British at Falahiyah, as well as at Wadi, it seems that, during his conference with General Gorringe, Lake proposed that troops should be transferred from the left to the right bank of the Tigris, and that an advance should be made against the Sinn Abtar Redoubt. It may also be pointed out that, in favour of this alternative, was the fact that the course followed by the Tigris was such that the capture of the Sinn Abtar lines would bring the British nearer to Kut-al-Amarah than would an equal advance on the left bank of the river. Even if the Tigris Corps did not succeed in gaining the right bank of the river opposite to the town, a point might, therefore, be reached to which the garrison could perhaps send their one steamer, the tug Sumana, for the purpose of drawing food.

It is possible that even a more drastic policy than that proposed by Sir Percy Lake might, in this crisis, with profit have been adopted by the British. The presence of the bridge at Falahiyah

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certainly endowed them with the power of transferring troops from one bank of the Tigris to the other far more quickly than the Turks could either ferry men over it at Magasis, or march them round by way of the bridges at Shumran and Bassouia where two were now in existence; and this in ordinary circumstances, would have constituted an important tactical advantage, since the British could concentrate force on either bank of the Tigris more quickly than the Turks could do so. But, as has been stated, the existence of the defile at Sannaiyat, and the incidence of the floods which limited the areas over which the British could advance, largely nullified this advantage; for the Turks would thereby be enabled to gain the time necessary for the movement of troops to oppose our concentration of force and shortage of rations and transport tended, in addition, to restrict our power of manœuvre. The past experience of the British also was such as to show that, even had time not been an object, there was but little prospect of forcing the lines at Sannaiyat with the support of such gun-power as was available, so that there would not be any advantage from the point of view of local offence in still keeping troops in face of them. It is suggested, therefore, that perhaps it would now have been profitable to have relinquished, for the moment, the power of moving troops from the Sannaiyat front to the right bank over the bridge at Falahiyah and *vice versa*. After the 3rd Division had closed on Bait Issah, such formations as were not needed for the security of Wadi might have been transferred from the left to the right bank of the river; the area in front of Sannaiyat might, if this was practicable, have been flooded, and the British, as a last throw, might have attacked the Bait Issah-Dujailah positions with the large majority of the Tigris Corps. Against this suggestion there is the fact that the areas over which the troops could move on the right bank were already so much restricted by the floods that the transference of the units forming the right wing of the army to the region opposite to the Bait Issah-Dujailah positions would have been slow, and their

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maintenance very difficult. And if the Turks discovered what was taking place they could, by breaking embankments, have engulfed much of the ground near the Tigris; and therefore either again restricted the frontage that was available for operations near the right bank, or obliged the British to undertake their attacks so far from the river that only a comparatively small force could have been maintained with the transport that was available.

General Gorringe preferred to retain the power of manœuvre between the two banks of the Tigris through Falahiyah, and, while directing the 7th Division to sap forward towards Sannaiyat, he sent orders, in accordance with Sir Percy Lake's wishes, that the work of repairing the embankment near the Abu Rummon Mounds should be expedited. Preliminary instructions were also circulated for the prosecution of an offensive on the right bank, which was to be undertaken by the 3rd Division, under Major-General H. D'U. Keary, at dawn on the 13th April; and General Keary then warned the 7th and 9th Infantry Brigades to be prepared to make the attack, and to arrange for the reconnaissance of the area over which the units were to advance.

Meanwhile a reconnaissance had already been carried out, on the 9th April, by the men of the 8th Infantry Brigade towards a forward position behind the canal marked A, which was being held by a small force of the enemy. The report that was sent in to the headquarters of the 3rd Division was to the effect that, although an advance could be made by night to ground close to the enemy's position with little or no loss, the British would hardly have sufficient time in which to dig in adequately before daybreak, when they would be exposed to fire both from the front and from the left bank of the Tigris*. There was, it was also stated, a small morass in front of the advanced position, formed by water flowing out of the canal behind which the Turks were entrenched, and, in addition, a belt of low scrub. Any trenches that were made by the British would therefore be liable to be

*The Tigris is from 300 to 400 yards wide.

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submerged if the enemy broke the embankments holding in the water of the Tigris near this canal, and it would be difficult to keep our troops supplied with food should further flooding take place in the areas behind them.

The result of another reconnaissance that was carried out by units of the 7th Infantry Brigade on the 10th April, went to show that the enemy's forward position could best be approached by advancing against it from the south-east, thus avoiding the small morass. In the afternoon, at 4-30 P.M., two companies of the 89th Punjabis were also sent forward, in spite of some resistance on the part of the Turks, for a distance of about 1,200 yards across Marsh N to a locality, subsequently known as Rohde's Picquet, which was about 1,500 yards from the enemy's entrenchments at the Twin Pimples.

The fact that this advance had been easily effected naturally gave rise to doubts as to whether the Turks had not abandoned the forward trenches at point A, on account of the increase in the size of the flooded area behind them. General Keary gave orders, therefore, at 7 P.M., that the 8th and 37th Infantry Brigades were to find out definitely whether the enemy's picquets were or were not still holding the line of the canal. At the same time the Brigadiers were told that the position was probably occupied by a force of three companies, and that the inundated area to the east of Bait Issah now extended for a distance of one and a half miles from the Tigris and was 800 yards wide. If the Turks were not holding the position at point A, the two Brigades were to advance to the canal and throw up entrenchments on its banks with the support of the 7th Infantry Brigade. The reconnoitring patrols found that the enemy's troops were still in occupation of the trenches at A, and the advance therefore was not made.

On the morning of the 11th April those units of the 3rd Division that were still standing to the east of the flooded areas between Abu Rumman and the Twin Canals, were moved northwards

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and concentrated on the Thorny Nullah at a locality about one and a half miles from the Tigris. There was but little fighting on the right bank of the river during the day, but the 8th Infantry Brigade had some trouble in keeping enemy marksmen out of range of the British batteries which were standing behind the battalions. Reconnoitring patrols that were sent out by the main body of the 7th Infantry Brigade penetrated to within 600 yards of the Twin Pimples, after passing over Marsh N and several deep canals in the area to the north-east of Rohde's Picquet. These patrols ascertained that the enemy's trenches on the ground to the south of Bait Issah were strongly held.

At 2 P.M. General Gorringe circulated an order in which he mentioned that it was his intention "to operate on the right bank and to force the enemy's Sinn position (that is the lines extending to the south of the Es Sinn banks), while containing the enemy in his present Sannaiyat position and in front of Bait Issah with the 7th Division." But, apparently with the object of misleading the Turks should reports of these intentions reach them, he let it generally be known that an advance would be made by the British against Bait Issah for the purpose of gaining a position from which the lines at Sannaiyat could be taken in reverse

In pursuance of the former plan the following moves were to be made: on the morning of the 13th, the 3rd Division was, as a first objective to capture the Turkish trenches lying in front of Bait Issah. The 35th Infantry Brigade was to proceed, on the 11th, from the camp at Falahiyah where it had been engaged in carrying out protective duties, to the vicinity of the Twin Canals, so as to secure the left of the 3rd Division with the assistance of the 44th Field Battery. The 7th Division was to take over the trenches on the right bank of the Tigris and facing the Sannaiyat position that were occupied by the 40th Infantry Brigade. This Brigade was then to join the rest of the 13th Division at Falahiyah. The protection of the camp here would be undertaken by General Maude's divi-

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sion, but two of its brigades were to be ready to move to Bait Issah after dark on the 13th April. After consolidating our hold on the entrenchments that would have been captured on the morning of the 13th, the troops of the 3rd Division were, by the morning of the 14th, to have seized the trenches that had been constructed by the British on the 8th and 9th March in the area to the east of the Sinn Abtar and Dujailah Redoubts. The Cavalry Brigade, which had marched up from Shaikh Saad on the 10th, and the 36th Infantry Brigade were to remain, the former at Sannah and Saiyad Hashim, the latter near Orah with one battalion at Sannah.

In the evening, accordingly, the 35th Infantry Brigade marched to the Twin Canals. The headquarters of the 9th Infantry Brigade, with the Highland Light Infantry and the 93rd, had already moved towards Mason's Mounds during the morning and were standing some distance to the north of the 7th Infantry Brigade; and here they were joined first by the 1/9th Gurkhas and later by the 1/1st Gurkhas. (Map 1.)

On the other bank of the Tigris there was some shelling by the enemy's artillery, but in general the 11th April was spent in improving the trenches, in making communication trenches and in laying telephone wires. In the evening the 19th Infantry Brigade relieved the 40th in the left of the British position. Orders were also given that certain transfers of batteries should be made during the night between the 7th and 13th Divisions, the 9th Field Artillery Brigade being attached to the 13th Division, whilst four batteries of the 66th Field Artillery Brigade, the 72nd and 77th Howitzer Batteries and the two guns of the 1/104th Heavy Battery were allotted to the 7th Division.

As a preliminary to his advance against the Bait Issah position, which was believed to be garrisoned by 9 companies of infantry with 8 guns, General Keary had decided to capture the advanced position at A on the night of the 11/12th April, and had designated the 7th and 9th Infantry Brigades for this duty.

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Arrangements were also made for the artillery on the right bank to support them after daybreak, and for the concentration of the 8th and 37th Infantry Brigades, less the machine guns of the former which remained in positions whence fire could be delivered on the lines at Sunnaiyat, as a reserve. A very heavy thunderstorm, however, broke over the district at 8-30 P.M. and two inches of water were in consequence soon standing on the surface of the plain. Gorringe therefore had no alternative but to issue orders for the postponement for 24 hours of the attack on Bait Issah, and all the ancillary movements.

There were now as a rule four or five British land planes and two or three sea planes fit for flying, and the few aircraft possessed by the enemy were not often in evidence. About half of the time spent in the air by the British could therefore be devoted to the control and observation of gun fire, and the remainder to the work of reconnaissance and bombing.

Early on the 12th April our reconnoitring airmen observed that a considerable body of Turks, perhaps as many as 5,000, was engaged after the storm in drying clothes and blankets in the area to the south-west of the Dujailah Redoubt. There were, it was noted, fewer men at the Sinn Abtar Redoubt, but there were camps on the Nasafiyah Canal, and at Magasis where ferrying was in progress, and here a shed was destroyed by one of our bombs. There were a couple of guns at Chahailah, and the trenches at Bait Issah were occupied by troops. It was reported, moreover, that under the influence of the hot sun the ground was drying rapidly.

In consequence of this information Sir George Gorringe sent a message to General Keary asking him to consider whether the time that had been lost through the thunderstorm could not be regained by making a thrust forward, after dusk, to the enemy's advanced position. The second objective, the entrenchments near Bait Issah, could then be attained early on the 13th. An infantry brigade of the 13th Division would, he said, be despatched in

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the evening to Abu Rumman, so as to be at hand to take over the enemy's advanced position from the 3rd Division.

General Keary had already, at 9·45 A.M., sent instructions directing the 8th and 37th Infantry Brigades to establish a new line of resistance in front of the existing line of picquets, and to push back the Turkish sharpshooters. The artillery were to support the infantry, and the 7th Infantry Brigade was to conform with the movements of the others. The order, however, had been cancelled owing to the depth of the water in front of the 37th Infantry Brigade, although the patrols of the 8th Infantry Brigade had not found that there was much increase in the depth of the inundation in the area beyond their picquet line.

On receiving the message from the Corps Commander Keary discussed the situation with his brigadiers, and as a result it was decided to push forward in the afternoon. At 3·30 P.M. accordingly the 8th Infantry Brigade advanced, the 47th Sikhs being on the right, the Manchesters in the centre and the 59th on the left; the latter being directed to work in conjunction with the 1/4th Somerset Light Infantry, the battalion on the right of the 37th Infantry Brigade. The 2nd Rajputs remained in the entrenchments on the right bank of the Tigris facing the flank of the Sannaiyat position, for the purpose both of guarding the dykes and protecting the artillery from the Turkish sharpshooters on the left bank of the river. Of the 37th Infantry Brigade the 36th Sikhs were on the left of the Somersets, and the 1/2nd Gurkhas were held in reserve. Instructions were also given to the 36th to hold out a hand to the infantry of the 7th Brigade, whose troops at Rohde's Picquet were already to the south-west of the enemy's advanced position at A.

The result of the drive forward was that the trench at A was easily captured by the 8th Infantry Brigade at 4 P.M., but the combination of flood water in Marsh M to the east of Bait Issah, a strong gale which suddenly arose from the north-east, and

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enfilading fire by enemy machine guns from the left bank and rifle fire from the front, prevented much further ground being gained by the battalions on the right of the Brigade. At 5-45 P.M., therefore, the construction of a new line of trenches was begun by them on the eastern edge of Marsh M, on ground where the subsoil was not waterlogged and about 1,000 yards to the west of the frontage that had been held by the picquets prior to the commencement of the operations. The 59th, who were at first some 700 yards ahead of the Manchesters, drew back at about 10 P.M. into line with them. About an hour later a company of the 1/1st Gurkhas of the 9th Infantry Brigade was sent up for the purpose of prolonging their left and getting into touch with the 37th Infantry Brigade.

This Brigade had met with little opposition at first, but after crossing a belt of water which was in places as much as two feet deep, the two leading companies of the 1/4th Somerset Light Infantry came under heavy musketry, the positions of the firers being, as usual, very difficult to locate in the level and almost featureless plain. The British continued, however, to advance until a point was reached within from 200 to 300 yards of the Twin Pimples, but here they were obliged by the fire of the Turks to come to a halt, as they were without the support of artillery. Two companies of the 36th, the men of which had been checked by the fire of a couple of machine guns, were now about 500 yards to their left rear with a third company in support.

Owing to casualties among the signallers and to the cutting of the telephone wire by bullets, communication between the headquarters of the 36th and these two companies had broken down, and no news could be obtained by other means from the front. At about 7 P.M. the commander of the 36th Sikhs went forward, therefore, with the remaining company, taking with him a company of the 1/2nd Gurkhas, and succeeded, at 11 P.M., in getting into touch with the 1/4th Somerset

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Light Infantry. Not long after midnight the Somersets received a belated message from the 59th that the line of the 8th Infantry Brigade was falling back for half a mile, and the Somersets consequently withdrew their right so as to conform with this movement. At 2-30 A.M. on the 13th another message reached the 1/4th Somerset indicating the position that was being held by the 8th Infantry Brigade, and, after communicating with the 36th and covering their withdrawal to the vicinity of the Narrows, the two companies of the Somersets retired, at 3-30 A.M., to a position about 1,200 to 1,500 yards from and to the north-east of the Twin Pimples. Here they were joined by the third company of the battalion, the other being still in reserve.

Meanwhile General Egerton, commanding the 7th Brigade, had heard from the detachment of the 89th, who were holding Rohde's Picquet, that the Turks were falling back before the 37th Infantry Brigade; and he therefore gave orders, at 4-15 P.M., for the 89th to send forward a couple of companies, supported by the remainder of the unit. General Egerton then advanced himself to Rohde's Picquet with the 27th Punjabis, and, on reaching it, found that the 89th had pushed on from 1,000 to 1,200 yards eastwards and were engaging closely the Turks who were holding the entrenchments to the south of the Twin Pimples; but touch had not been established with the 37th Infantry Brigade. The Turks now made a counter-attack against the left of the 89th, and Egerton therefore sent two companies of the 27th to this flank, brought the Connaught Rangers to Rohde's Picquet, and issued instructions that the 128th Pioneers were to occupy the point that was afterwards known as the Triangle. Subsequently the 89th obtained contact with the 36th Sikhs, but, when the latter withdrew, half a company of the Connaught Rangers was moved to the right of the 89th, and half a company to their support; one platoon of the latter was, however, subsequently despatched to fill a gap which had appeared between the 89th and 27th. Two companies of the Connaught Rangers were also sent to the left of

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the 27th, and portions of these occupied the trenches lying to the north of the Triangle; but the rest of the Connaught Rangers and of the 27th remained at Rohde's Picquet. At 1-30 A.M. on the 13th the 128th, whose position was somewhat exposed, were withdrawn to the western edge of Marsh N. With the exception of the 89th, who were under fire during the greater part of the night, the units of the Brigade were then not seriously disturbed.

While these events had been taking place the 9th Infantry Brigade, with the exception of a portion of the 1/1st Gurkhas had been moved in the evening of the 12th to the support of the 8th and 37th Infantry Brigades. But the Brigade was not engaged in this action which cost the British a total of 447 casualties, 12 of whom were British and 12 Indian officers.

On the left bank of the Tigris the heavy rain of the night of the 11/12th April had already flooded the forward trenches on the right of the 7th Division; and most of the day of the 12th was spent in consequence by the men of the 9th Bhopals, who were holding the right of our line, and the English Composite Battalion who were on their left, in draining them.

The north-easterly gale which began to blow at 4-30 P.M. caused havoc in the trenches of the 7th Division. The water in the Suwaikiyah Marsh was at once driven southwards by the wind, and great waves so quickly beat down the dykes and swept over the trenches that the garrisons of the right sections of the front trenches, and of the most northerly communication trench, lost all their tools, blankets and kits, but managed to save their rifles and machine guns. To add to the difficulties of the situation the Turks opened rifle and artillery fire on the men of the Bhopal Regiment as they scrambled out of their trenches causing some casualties. But the Bhopals soon manned the parados, as did the English Battalion on their left, and the Turks, whose trenches were now also flooded, gained nothing in the exchanges. Unfortunately it so happened that the relief of the batteries, which had been postponed owing to the thunderstorm on the 11th, was

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in progress at this time, and as the batteries behind the right of the British front were also involved in the flood, but little gun fire was opened on our side. The wind dropped at 7-30 P.M. and the Marsh at once receded, leaving, as it generally did, some fish large and small behind; and the troops, the Bhopals had meanwhile been replaced by the Composite Mahratta Battalion, again began the heart-breaking task of trying to drain their trenches, or if this was not possible digging others. Our artillery maintained a slow fire on the enemy's positions during the night for the purpose of harassing any Turkish troops that might be working on their entrenchments.

The causeway along the right bank of the Tigris had by this time been sufficiently repaired to enable use to be made of it by the troops of the 3rd Division. But the rain had made the top of the ground so soft that, after the passage of the battalions of the 9th Infantry Brigade along it, the bank became for the moment impassable even for traffic on foot. As soon as the reports of the advance of the main body of the 3rd Division came in, General Gorringe therefore sent orders that a reconnaissance was to be made with the object of ascertaining whether guns could now be brought forward for the support of the infantry by way of the Twin Canals. This, however, was found not to be practicable. While the repair of the causeway was pushed forward Gorringe consequently issued a warning to the 3rd Division, early on the 13th April, that, before proceeding to attack the entrenchments lying further to the south, it would first be necessary to seize those to the west of the ruins of Bait Issah, so as to obtain control over the channels through which flood water was reaching the Umm-al-Brahm. Reconnaissance, he said, must also be made of the enemy's positions at Bait Issah.

On the right bank when day dawned on the 13th April it became apparent that there was an interval of about a mile of ground, covered mainly by shallow inundation, between the left of the 37th and the right of the 7th Infantry Brigade. At about

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11 A.M. two companies of the 1/2nd Gurkhas were therefore sent out to close this gap. It is never easy to keep one's bearings in the great mirage haunted levels of Mesopotamia, and it is therefore not surprising that, at about noon, the 89th observed that the Gurkhas had taken up a position which faced south and was about 1,000 or 1,200 yards to the north of Rohde's Picquet. A communication was consequently sent to them explaining the dispositions of the 7th Infantry Brigade, and later in the day the Gurkhas extended the left of the 37th Brigade as far as the Narrows by means of a series of short trenches. (Map 2.)

During the morning the 128th reoccupied the Triangle, as it was reported that the enemy were advancing from the south-west; and at the same time the 27th and Connaught Rangers altered their line so that the trenches faced to the west rather than as before to the south-west. In the evening another readjustment was made of the front line of the 7th Infantry Brigade, the Connaught Rangers being placed on the right of the 89th. The Right Bank Artillery* were moved forward during the day to positions behind the line that was being held by the 3rd Division so as to be in readiness to support the new offensive.

It appears that some doubt had been entertained at the headquarters of the 3rd Division as to the position of the entrenchments lying to the west of Bait Issah, which according to General Gorringe's recent order were now to be captured; but Keary had finally come to the conclusion that these were the lines near to the Twin Pimples which had been mentioned in the Corps order of the 11th April, and he accordingly took measures for a methodical advance against them. At 2·25 P.M. on the 13th, therefore, instructions were sent to the commander of the 7th Infantry

*The Right Bank Artillery now consisted of: the 4th Field Artillery Brigade (less the 7th Battery in reserve); the 13th Field Artillery Brigade (less the 44th Field Battery); A, B and C Batteries of the 69th Field Howitzer Brigade; 60th and 61st Howitzer Batteries; 1/1st Sussex Field Battery; 23rd Mountain Battery (less one section; 2/86th and 2/104th Heavy Batteries; and one 6 inch Howitzer. It was controlled, under Major-General Keary, by Brigadier-General G. F. White, commanding the Corps Artillery.

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Brigade that a reconnaissance of this position was to be carried out, and its southern limit definitely located, which was no easy matter for the level scrub grown plain was here corrugated with disused canals and channels. The units of the Brigade were also to be prepared to push forward during the night and entrench on a frontage close to and parallel with the Turkish entrenchments. The 9th Infantry Brigade, to which the 1/1st Gurkhas were to return, was before nightfall to move to a position near to that of the 7th Brigade.

At about 8 P.M. a further message was sent to the 7th Infantry Brigade. This was to the effect that an assault was to be made on the enemy's trench that was being faced by the 89th early on the 15th April, after a short bombardment. The Brigade, therefore, was to entrench a line as close as possible to that of the Turks so as to facilitate observation of the fire of our guns. The message ended, however, with the statement that word had come in from the Corps Commander that, in order to regain the time which had been lost owing to the bad weather, the Turkish entrenchments should be carried, without the assistance of gun fire, on the night of the 13/14th, (for registration had not yet been made), if the reports of reconnoitring patrols were to the effect that they were not occupied in strength.

General Egerton replied, at 10-45 P.M., that directions had been sent to the 89th, whose picquets were only 75 yards from those of the Turks, to clear up the situation; but that he considered that the garrison of the enemy's trench was too numerous to justify an immediate attack. It was also stated that, in consequence of a report that the Turks were moving forward from the direction of the Dujailah Redoubt, the picquets of the 128th had again (that is in the morning of the 13th, as mentioned above) been sent to the Triangle.

General Keary, however, did not modify his orders, and instructions were despatched to the 7th Brigade that the 128th were to be withdrawn, and that everything that was possible should

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be done to carry out the directions that had previously been given. The 128th were accordingly moved back to the edge of Marsh N, but an assault was not delivered against the Turkish position.

It had been intended that, on the 14th, the gunners should, with the assistance of our airmen, locate and carry out registration and counter-battery work on the enemy's entrenchments and artillery. A strong south-westerly gale which sprang up and also brought some rain, however, prevented the airmen from flying, and it was found that the observers on land could not satisfactorily regulate the fire of the guns.

During the morning of the 14th the 128th returned to the Triangle. A report was received from the 89th that the enemy's position seemed to be continuous in the neighbourhood of the Twin Pimples, but that the southern portion was hidden by scrub and appeared to be held only by small parties or posts. The distance between the lines of the British and those of the Turks was 400 yards, and the enemy's picquets were 75 yards from those of our troops. At 4 P.M. General Keary held a conference with General Egerton who was commanding the 7th, and Lieutenant-Colonel L. W. Y. Campbell who was in control of the 9th Infantry Brigade, and their staffs, in regard to the delivery of the attack. Subsequently orders were received in the evening from the headquarters of the Tigris Corps that the assault was to be made at dawn on the 15th April; that the 38th Infantry Brigade, of the 13th Division, which was about 2,300 strong, and was now standing some 3 miles to the south of the Abu Rumman Mounds, was to proceed to a position near Rohde's Picquet; and that the 36th Infantry Brigade, which had moved into the Falahiyah Bend to a point near the bridge on the 13th, would be held in readiness to march from this area at 8 A.M. on the 15th. (Map 2.)

At 9 P.M. on the 14th the commander of the 3rd Division issued his final orders for the attack. Under these it was laid down that the frontage extending roughly from the Twin Pimples

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to the Boil, was to be captured at 4-45 A.M., by the 7th Infantry Brigade (less the 128th) and the 9th Infantry Brigade, the two advancing side by side; but all arrangements for the deployment and assault were to be made between the two Brigadiers. It was stated that the 38th Infantry Brigade would move to a position in the area lying to the north of Rohde's Picquet; but the 8th and 37th Infantry Brigades were to remain stationary, except that the latter was to take over the entrenchments on the right of the 89th Punjabis at the Narrows then occupied by a company of the Connaught Rangers. As soon as it was sufficiently light on the 15th April to enable fire to be opened, the guns were to put down a barrage in front of the entrenchments to the east and south of Bait Issah. The Divisional Cavalry—one squadron of the 16th Cavalry—were to watch the frontage between the Triangle and the Umm-al-Brahm, apparently in conjunction with the 33rd from the Twin Canals.

The arrangements made by the commanders of the 7th and 9th Infantry Brigades were as follows: four battalions, two of each brigade, were to attack in concert, but the whole were not to be controlled by the commander of either of the brigades. The 27th Punjabis were to be relieved by the 93rd Infantry. Under cover of the 89th and 93rd, the Connaught Rangers and 27th of the 7th Infantry Brigade, and the Highland Light Infantry and 1/9th Gurkhas of the 9th Infantry Brigade, were then to be formed up at 3 A.M. about 1,500 yards from the Turkish trenches, on an alignment which would be marked out. The battalions of the 7th Brigade would be on the right, and an interval of 50 yards would be kept between the brigades. In the 7th Brigade, which was to direct, the Connaught Rangers, occupying a frontage of 400 yards, were to be in front; but in the 9th Brigade the two battalions were to be placed side by side each in column of half battalions, the Gurkhas being on the right. There were to be blocking parties of Engineers with the brigades; and after the capture of the position the Connaught Rangers were to bomb their way

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northwards as far as the Counter Canal, which was to be blocked. If necessary a bank was also to be made so as to prevent the trenches from being flooded through this canal. The troops were to advance at 4 A.M. on a compass bearing of 280°. Telephonic instruments were to be taken with the units, the cables being connected with those at the headquarters of the Brigades.

The night of the 14/15th April was dark and cloudy, and at 3 A.M. a violent thunderstorm, signalised by particularly vivid lightening, again burst over the field. There was in consequence difficulty in getting the troops into position, and for some reason the interval between the two brigades was more than 50 yards.

The units, however, duly marched off at 4-45 A.M., when it was still very dark owing to the storm, and the battalions of the 9th Infantry Brigade were now ordered to incline to their right so as to close the gap between them and the units of the 7th Infantry Brigade. The result of this inclining movement was unfortunate, for the two leading companies of the Highland Light Infantry soon passed in front of the 1/9th Gurkhas and joined the Connaught Rangers. In addition, the storm and the attraction of the men's rifles and bayonets so affected the compasses of the guides that direction was lost by the main body, and in consequence the Connaught Rangers, Highland Light Infantry and 1/9th Gurkhas advanced in a north-westerly rather than in a westerly direction. This incident raises the question as to whether some other and more reliable means of directing the column might not have been employed ; since the greater part of the advance was made under the protection of the 89th, whose picquets, as stated above were only some 75 yards from those of the enemy, while their trenches were not more than 400 yards from the lines that were to be attacked.

In accordance with instructions that had been given to them, the 27th, who apparently kept their direction, halted in the picquet line of the 89th. Portions of the Connaught Rangers, Highland Light Infantry and 1/9th Gurkhas missed the position

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altogether, and wheeling right round eventually passed through the lines of the 37th Infantry Brigade. About 60 men of the Connaught Rangers, 100 of the Highland Light Infantry and 100 of the 1/9th, under an officer of the Connaught Rangers, however, reached and, what was equally difficult, recognised the enemy's trenches near the Twin Pimples, and cleared them without much resistance.

When day dawned (about 5-30 A.M.) patrols were sent forward by the 27th, and these coming in on the flank of some Turkish troops that were still in the right section of the trenches, shot several of the enemy and also took some prisoners. Not long afterwards a company of the battalion occupied this part of the Turkish line, and was subsequently reinforced by another company. During the morning a patrol of the 93rd captured an officer and 25 men who were still lurking in the scrub on the left of the 27th Punjabis.

As soon as the Turks realised what had happened in the area near the Twin Pimples they at once began to harass the British with the fire of machine guns and rifles from the lines near Bait Issah, but this fire was subsequently held in check by our artillery. Except for a small counterattack delivered at about 11 A.M., which was repulsed, and the appearance of cavalry on the plain to the east of the Dujailah Redoubt, the enemy then relapsed into comparative quiescence. Orders, therefore, were issued in the morning from the headquarters of the 3rd Division that all troops not required to hold the captured trench should be withdrawn. Later in the day further instructions were sent out that the 9th Infantry Brigade was to take over the position after nightfall, and that the 7th Infantry Brigade was to prolong the line eastwards from the left of the 9th Brigade so as to connect with the 38th Infantry Brigade, which was now on the ground to the south of Rohde's Picquet. Accordingly the 1/9th Gurkhas and the 93rd occupied the captured position in the

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evening, and two companies of the Connaught Rangers were placed on their left. (Map 2.)

While this action had been in progress the 8th and 37th Infantry Brigades had opened fire at daybreak on the 15th in support of the attack of the 7th and 9th Infantry Brigades, drawing a vigorous reply from the Turks. At about 8 A.M orders were sent to the 37th Infantry Brigade that touch was to be established with the troops who had captured the enemy's line near the Twin Pimples, and that the Brigade was then to occupy the whole of the space between this locality and the 8th Infantry Brigade.

This duty was confided to the 1/4th Somerset Light Infantry and 1/2nd Gurkhas, whose movements were, however, delayed by the fire of parties of Turkish troops holding localities on or near the Cholera Creek and facing the 8th Infantry Brigade. Meanwhile patrols of the Manchester Regiment of the 8th Brigade had reported that a trench facing and about half a mile from the picquets of the Brigade was occupied only by a few groups of Turks, but that the area in front of the position was knee deep in mud and water. At 1-30 P.M. Brigadier S. M. Edwardes, who had taken over the command of the Brigade on the 1st April, sent orders that the 47th, the Manchesters and the 59th were each to push forward a strong patrol for the purpose of driving in the enemy's picquets, but that the men were not to involve themselves in an engagement. The advance of these patrols was, however, made so suddenly and with such vigour that the Turks were not only driven out of their trench, but left behind 43 prisoners. The troops then set about the construction of dykes so as to prevent the water of the Tigris from flooding their new positions and also the area to the south of them.

In the afternoon the 1/4th Somerset Light Infantry and the 1/2nd Gurkhas were able to establish touch, the former with the 59th of the 8th Infantry Brigade, the latter with the 1/9th Gurkhas of the 9th Infantry Brigade; and after night had fallen

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the construction of a breast work along the line X-Y between the Cholera Creek and the Counter Canal was put in hand. This work, however, was not completed, as the Turks, who were perhaps expecting another attack, indulged in a good deal of firing throughout the night. But the casualities of the British in all the fighting that took place during this twenty-four hours amounted only to about 170.

Some changes were made during the day in the positions of our artillery, the 14th Field Battery being brought up to the line that had been held in the morning by the 37th Infantry Brigade; and, in the afternoon, the four guns of the 23rd Mountain Battery were placed three-quarters of a mile to the west of Rohde's Picquet.

In the evening notification was received from the headquarters of the Corps by the 3rd Division, that the battalions of the 8th and 37th Infantry Brigades that were occupying the frontage extending from the Tigris to the Cholera Creek, would be relieved at dusk on the 16th April by a brigade of the 13th Division. General Keary was also ordered to prepare a plan for the capture of the entrenchments near and to the south of Bait Issah at dawn on the 17th April; and he was informed that, when this had been effected, the 3rd Division would be releived by the 13th, and would then seize the entrenchments that had been made by the British during the battle of the Dujailah Redoubt on the 8th and 9th March.

General Keary therefore put in hand arrangements to move forwards the 2nd, 8th, 66th, B69 and 1/1st Sussex Batteries on the 16th, so as to insure that close support might be afforded to the infantry in the attack on the positions at Bait Issah. The 44th Field Battery also joined the others after being brought from the Twin Canals* to Mason's Mounds and then ferried to Abu Rumman, as, in spite of the efforts of our working parties, the road along the bank of the Tigris between these two places was

* The 7th Battery replaced it at the Twin Canals.

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not yet fit for wheeled traffic. The construction of a causeway over the marshy land at the Narrows was undertaken in addition. (Map 3.)

During the 15th an encouraging message from Sir William Robertson, the Chief of the Imperial General Staff, was circulated among the units; and in this he said that the authorities in London: "Appreciate the gallant effort your force is making in face of great difficulties. Experience in France shows that progress in this line of warfare is bound to be slow." In issuing this communication Sir Percy Lake added that no commander could have been better served than he had been.

Dawn on the 16th April was signalised for the British by a smart piece of work on the part of the 47th Sikhs, who captured a small Turkish post that was still in position in the northern portion of Marsh M, and was guarding one of the canals that produced it; and measures were at once taken to construct a dyke across the mouth of this waterway. Not long afterwards orders were issued by General Keary, and General White, the commander of the Corps Artillery, in regard to registration by the guns on the Bait Issah entrenchments. During the morning instructions were also sent out that the battalions of the 8th Infantry Brigade were, as far as possible, to be concentrated behind their positions which were to be held by picquets only.

At 11 A.M. General Gorringe came himself to the headquarters of the 3rd Division, which were about a mile from and to the south of the Abu Rumman Mounds, and a consultation then took place in regard to the impending advance. At noon General Keary explained his intentions both to his brigadiers and to the commander of the artillery, and these officers were informed that, owing to the presence of flood water in front of the 8th and 37th Infantry Brigades, the attack which was to be made for the purpose of gaining possession of the canals lying to the west of the ruins of Bait Issah, must be delivered from the frontage to the north-east of the Twin Pimples and between the Cholera

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Creek and Counter Canal. As the conduct of the operation had been confided to the 3rd Division, the 8th and 37th Infantry Brigades, with the exception of the 1/2nd Gurkhas, would be relieved in the evening by the 39th Infantry Brigade of the 13th Division, but the 1/2nd Gurkhas would be replaced by a battalion of the 7th Infantry Brigade. The 8th Infantry Brigade would, as quickly as possible, then take over the lines occupied by the units of the 7th and 9th Infantry Brigades, and the 37th Infantry Brigade would be held in reserve. The 7th and 9th Infantry Brigades, each accompanied by a blocking section of Sappers and Miners equipped with sandbags, would assemble, at 4-15 A.M. on the 17th, between the Cholera Creek and the Counter Canal behind the line between Y and X that had been held by the 1/2nd Gurkhas, and from this they would deliver the assault on the Bait Issah entrenchments. These it may be noted, had been variously reported to be 800, 1,000 yards and one mile from the position of assembly.

This general post possessed obvious disadvantages, for the troops would necessarily on the one hand be fatigued, and on the other it was unlikely that all the reliefs and other arrangements would work quite smoothly. There must therefore have been cogent reasons in favour of this arrangement, and one of them was possibly that the battalions of the 7th and 9th Infantry Brigades were numerically a good deal stronger* than those of the other brigades of the 3rd Division.

As regards the action of the artillery it was laid down that the guns would first register for a period of 20 minutes on the enemy's positions. An intense bombardment would then be opened at 6-45 A.M.† on the trenches between points A. 1., A. 3., and A. 3. and A. 6., and also on the retrenchment beween A. 2. and A. 4. Oblique and enfilading fire were to be employed to as great

* The fighting strengths of the brigades were approximately: 7th Brigade, 1,850; 8th Brigades, 1,700; 9th Brigade, 1,850; 37th Brigade, 1,200.

† At this period the sun rose at about 5-30 A.M., and set at about 6-30 P.M.

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an extent as possible, and special attention was to be paid to the salient at A. 5. At 7-10 A.M. the fire of a portion of the guns was to be lifted on to the trenches lying to the south-west of A. 5. Other batteries were to shoot at Turkish bivouacks that were visible among the canals behind the trenches, at the area to the west of the canals and also at some sandhills lying to the north of Bait Issah and on the left bank of the Tigris.

During the early and the intense bombardments the 7th and 9th Infantry Brigades were to advance as close as possible to the portions of the enemy's position lying between the point of the salient and the Counter Canal. After the capture of this section the men of the 7th Brigade were to clear the trenches extending northward, and they were also to occupy the mouths of the six canals situated to the west of the ruins of Bait Issah and to establish connection with the 9th Infantry Brigade. At the same time the battalions of the 9th Infantry Brigade were to clear the trench for a distance of 150 yards to the south-west of A. 5., and were to block it and also to establish a line along the Counter Canal from the Es Sinn track to the point where the Canal passed through the enemy's position.

The 37th Infantry Brigade was to move at 6-15 A.M. towards the Narrows, so to be in a position from which support could be given to the 7th and 9th Infantry Brigades ; the 8th Infantry Brigade was to open up the Counter Canal as a communication trench from the Twin Pimples to the Bait Issah entrenchments, and was, in addition, to prepare it as a fire trench facing to the south-west. The men of the 8th Infantry Brigade were also to fire during the artillery bombardment and assault on the entrenchments extending to the south-west of the Counter Canal. The left flank of the 3rd Division was to be secured by the Divisional Cavalry.

In the evening detailed orders were circulated allotting tasks to the various batteries, and the gunners were warned that

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no unusual amount of firing was to take place during the night of the 16/17th April.

In accordance with the instructions which had been issued by General Keary, two companies of the Manchester Regiment, two of the 47th and two of the 59th, that had been withdrawn from the front by the commander of the 8th Infantry Brigade, and the whole of the 2nd Rajput Light Infantry, who had now been brought to the front, moved on the afternoon of the 16th to Rohde's Picquet; and at nightfall two companies of the 47th on the right and two of the 59th on the left relieved the 1/9th Gurkhas, the 93rd and the Connaught Rangers in the trenches extending southwards from the vicinity of the Twin Pimples. The two companies of the 1st Manchester, with the machine guns of the battalion, replaced the 128th at the Triangle, and the Rajputs remained at Rohde's Picquet.

Meanwhile the staffs of the 7th and 9th Infantry Brigades had been busy with the many other arrangements that must be made before a concentration by night can be effected, such as the reconnaissance of routes, the marking of places of assembly and deployment, conferences with one another and with the commanders of battalions, and the preparation of orders. It was agreed that the 27th Punjabis of the 7th Infantry Brigade should leave Rohde's Picquet at 6·30 P.M. and relieve the 1/2nd Gurkhas on the frontage, some 600 to 700 yards in extent between the Cholera Creek and the Counter Canal at Y and X; and that about an hour later the 1/1st Gurkhas should proceed to this locality and take over from the 27th 300 yards of the left of this line.

As regards the movements of the rest of the 7th Infantry Brigade, the Connaught Rangers, the 89th and 128th were to march in column of route, at 1·30 A.M. on the 17th April, from the locality where they would have assembled after the Rangers had been relieved in the trenches, to a point about half a mile to the south-east of the line held by the 27th Punjabis. Here the

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troops would form up, the right of the Connaught Rangers, who would be on the right of the Brigade, resting on the Cholera Creek, the 89th in the centre and the 128th on the left. The Connaught Rangers, with whom were drafts for the Queen's Own, would have about 900 men on parade, and these were now to form in column of platoons, the whole being on a frontage of 50 yards except those of the leading company which would occupy a frontage of 100 yards. The 89th who were about 300 strong, and the 128th who had about 280 in the ranks, would each be formed in three lines, the leading companies of the 89th being in line with the rear company of the Connaught Rangers. The troops would then move to the position that was being occupied by the 27th, and entrench themselves; and the 27th who could muster about 380 men, would, after leaving room for the Connaught Rangers to come up on their right, be formed in three lines. A small party of Sappers and Miners would be behind the left of the 27th; and the headquarters of the 7th Infantry Brigade would be placed on the left of their leading company, in close touch with that of the 9th Infantry Brigade.

In this Brigade the 1/1st Gurkhas, about 580 strong, were on arrival at the line that was being held by the 27th, to form in two lines, one close behind the other, on a frontage of 300 yards from the Counter Canal; the 1/9th Gurkhas, who had about 550 men in the ranks, were to come up later and form 25 yards behind the 1/1st Gurhas, and were to entrench in two lines with 25 yards distance between the lines; the 93rd, who had only about 250 men, were to follow at an interval of one hour, and were to form up and entrench in one line behind the 1/9th; and one hour later the Highland Light Infantry, who could put 480 men into the fight, were to advance, form and dig in 25 yards behind the 93rd in two lines which would also be 25 yards apart.

In the assault the Connaught Rangers and 27th were to attack the trenches extending from the salient to a point 300 yards to the south of it. While the 27th and the leading company of the

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Connaught Rangers cleared the retrenchment between A. 2. and A. 4., the second and third companies of the latter were to advance to A. 1.; and the 89th were to push on to the mouths of the canals lying to the west of the ruins of Bait Issah, but they were not to go beyond canal number 6, nor more than 500 yards from the ruins.

Of the 9th Infantry Brigade the 1/1st and 1/9th Gurkhas were to deliver the assault with the support of the 93rd, the Highland Light Infantry moving meanwhile to, and remaining in the trenches that had been vacated by the others. The left of the 1/1st was to advance to the point where the Counter Canal passed through the Turkish trenches, and when this locality had been captured two companies of the 1/9th were first to bomb southwestwards for 150 yards, and then block the trench with the assistance of a party of Sappers and Miners. Meanwhile the 1/1st and the remainder of the 1/9th were to occupy the retrenchment near A. 4., and were to establish a line along the northern portion of the Counter Canal so as to connect with that of the 7th Infantry Brigade.

The various reliefs were duly carried out before 11 P.M., when the 7th North Staffordshire and 9th Worcestershire of the 39th Infantry Brigade, each about 500 strong, had replaced the companies of the 8th and 37th Infantry Brigades, and the latter had concentrated to the east of the Narrows. The men of the 8th Brigade, however, then lost their way when marching to Rohde's Picquet and did not reach it until after 5 A.M. on the 17th.

The deployment of the 7th and 9th Infantry Brigades was satisfactorily effected, and their entrenchments had been completed by about 4-15 A.M. on the 17th, and the men then rested for a short time. The morning was misty, but registration by the artillery began at about 6-30 A.M., one hour after sunrise; and on the assumption that the distance to be traversed before reaching the enemy's position was 1,000 yards, the battalions of the 7th Infantry Brigade went forward at 6-55 A.M., by which time the mist had lifted, and at once came under long range rifle fire and machine gun fire.

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The distance had either been overestimated or the British and Indians moved faster than had been intended, for they found themselves in the zone of our bombardment five minutes before the time at which it was due to lift. A line of bayonets, the rifles of which were apparently resting against the parapet, while their owners crouched under cover, could now be seen above the enemy's trenches; and the officers leading the 27th decided, therefore, to risk the incurring of casualties in our barrage in the hope of surprising the Turks by an immediate assault. The 27th, with the Connaught Rangers and the 89th, consequently went boldly forward and were rewarded by overrunning the enemy who as anticipated were sitting at the bottom of the trench, three machine guns and about 60 Turks being captured. The rest of the programme was then quickly carried out, and, by 7-30 A.M., the 89th had gained number 6 watercourse, and had pushed a post of 30 men and 2 machine guns beyond it to a mound on the bank of the Tigris where they found themselves almost again in the area that was being swept by our artillery barrage. One company of the Connaught Rangers was on and a little behind the left of the 89th, and the rest of the Rangers were on the bank of the river. The 27th were to the south of the company on the left of the Connaught Rangers, and the 128th, who had advanced further than had been intended, were behind the main body of the Irish-English battalion. The 128th were subsequently moved back to a position behind the centre of the 27th and to the east of the northern portion of the Counter Canal; the headquarters of the 7th Brigade were placed near A. 3.; and picquets of the 89th and 27th were pushed out across the angle between the right of the former on the mound and the latter to the south of point A.14.

The attack of the 9th Infantry Brigade had been equally successful. At 6-50 A.M. a bombing party of the 1/9th Gurkhas advanced along the Counter Cannal and drove a Turkish picquet out of it. Five minutes later the 1/1st Gurkhas moved forward

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followed by the 1/9th, the troops coming under the fire of rifles and machine guns from the front and left front. The first line of Turkish trench was easily captured together with 3 machine guns and 100 prisoners, and the bombers of the 1/9th, supported by half of the battalion, then cleared the trench as far as point A. 6. where a double block was made by the Sappers and Miners. Meanwhile the 1/1st and the remainder of 1/9th had moved westwards driving the Turks before them, and eventually established touch with the 27th Punjabis at the Telegraph line. The headquarters of the brigade also advanced with the 93rd to the Turkish front trench. In the end, under cover of our artillery barrage, two companies of the 1/1st Gurkhas were established on the left of the 27th, and the line was then continued by the 1/9th at points A. 10. and A. 11., the 93rd being on the left with their flank at A. 6. The headquarters of the Brigade and the Highland Light Infantry were posted near point X. (Map 3.)

At about 8 A.M. it was reported that the Turks were preparing to attack the 7th and 9th Infantry Brigades, and were advancing towards point A. 6. up the trench which had been blocked, known subsequently as the Bait Issah trench. The 38th Infantry Brigade which had bivouacked about half a mile from and to the east of Rohde's Picquet, was therefore sent to the south of it, our guns were turned on the enemy, and their fire, together with that of the machine guns, caused the Turks to fall back at about 9-30 A.M. The British then continued under a hot sun, and desultory fire to which our artillery replied, the work of consolidating their positions; and portions of the 34th Pioneers and 20th and 21st Sappers and Miners were sent forward for the purpose of making embankments at the mouths of the canals lying to the west of the ruins of Bait Issah.

Subsequently the units of the 39th Infantry Brigade that were in the trenches to the north-east of the Narrows were, however, shelled for about an hour. But although information was

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also received that the Turks were engaged in ferrying troops across from the left to the right bank of the Tigris at Magasis, only a half-hearted advance was made towards Bait Issah at about 1 P.M. This was again promptly checked by the fire of our guns and the action then subsided.

During the attack of the 7th and 9th Infantry Brigades, General Edwardes, commanding the 8th Infantry Brigade, had placed the four machine guns of the 47th and the four machine guns of the 2nd Rajputs in the Counter Canal to the north-west of the Twin Pimples, as a support for the left of the 9th Brigade. The line held by the 8th Brigade was then continued for a distance of about 2 miles southwards from the Twin Pimples by portions of the 47th, who could in all put approximately 500 men into the battle, and of the 59th, who could muster about 350 rifles in the trenches; and these units were covered by a series of small picquets which were provided by a company of from 50 to 60 men of the 2nd Rajputs. At the Triangle were the two companies of the Manchester Regiment, numbering less than 300 men, and the rest of this battalion, with the three remaining companies of the 2nd Rajputs some 200 men, formed the Brigade reserve.

At 11-30 A.M. the Turks supplemented the other demonstrations which they had made or were making by a movement against the British left, and a body of about 2,000 infantry, accompanied by cavalry and guns, advanced northwards from the direction of the Jumailiat Ridge. But when the 38th Brigade deployed the 6th Loyals and one company of the King's Own to meet them, the enemy fell back. In order, however, more effectively to guard our left, the two remaining battalions of the 38th Brigade were moved in the afternoon to the east of Rohde's Picquet.

An incident had meanwhile occurred on the other flank which proved in the end to be disadvantageous to the British. Having observed a couple of guns which had been left behind by the Turks among some scrubby bushes in a small depression about a

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quarter of a mile to the south-west of point A. 13., the right of the 1/9th Gurkhas quite properly advanced at about 2 P.M. and captured them, together with 2 officers and 18 other ranks. As the guns could, however, not be removed one company was left to guard them, and since this forward thrust had produced a gap in our line, two companies of the 1/1st Gurkhas were then extended in a southerly direction in order to re-establish touch with the 1/9th. But the Highland Light Infantry were still held in reserve near the headquarters of the 9th Infantry Brigade at the Twin Pimples.

The general situation at the front was now as follows. Sir George Gorringe had taken a long step towards the attainment of his immediate objective, the 3rd Division had easily captured the northern portion of the Bait Issah entrenchments, the 13th Division was well placed to assist it, for the 39th Infantry Brigade was in position to the east of Marsh M, the 38th Infantry Brigade was standing close to Rohde's Picquet and the 40th Infantry Brigade was near Mason's Mounds. On the other hand the 3rd Division and the 38th Infantry Brigade had but little space in which to manœuvre owing to the presence of the inundated areas behind them, the 7th, 8th and 9th Infantry Brigades were spread over a large frontage which had not been thoroughly consolidated, and the ground lying between the 8th and 9th Brigades was not strongly held. If, then, the Turks could penetrate into and hold the interval between the Bait Issah entrenchments and the Twin Pimples, the 7th and 9th Infantry Brigades would be shut up in an area bounded on the north by the Tigris and on the east by a deep inundation, and occupied on the south and west by the enemy.

The topographical situation on the right bank of the Tigris was certainly such that the British were obliged to take big risks in pursuance of their plan, risks which were doubtless justified both by the precarious situation of the troops in Kut-al-Amarah, and by the fact that the Turks, so far, had contented themselves

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with resistance to, rather than counter-action against, our efforts to relieve the garrison. But it is suggested that these risks might have been mitigated had the frontage held by the 8th Infantry Brigade been curtailed, its right thrown forward so as to establish firm connection with the left of the 9th Infantry Brigade, and the whole or part of the 37th Infantry Brigade placed on the left of the 8th Brigade.

A still greater hazard, however, was forced on General Gorringe by his plan of battle, for after a conference that was held at 1-15 P.M. at the headquarters of the 3rd Division, orders were issued that it was the wish of the Corps Commander that, at dusk, the 13th Division should take over the line that was being held and consolidated by the 7th and 9th Infantry Brigades, in order to enable the 3rd Division to concentrate for the capture of its third objective, the entrenchments lying to the east of the Sinn Abtar Redoubt. Meanwhile an infantry brigade and a battery were to be pushed into the trenches to the south of the Triangle.

The substance of these orders was communicated by General Keary to his brigadiers, and the commanders of the 7th and 9th Infantry Brigades received instructions that these, after being relieved, were to move to Rohde's Picquet. General Fowler was informed that the 37th Infantry Brigade, which was about 1,200 strong, was to occupy for a distance of 1,500 or 2,000 yards the trenches extending to the south of the Triangle; that the two companies of the Manchesters would come under his orders; that a battery would, in the evening, be moved to his support; and that his men were not to involve themselves in close action. General Edwardes was directed to make arrangements for the maintenance of communication between the 13th Division and the 37th Infantry Brigade by means of a line of posts.

During the afternoon General Maude, whose headquarters were now near the Abu Rumman Mounds, also issued orders to the 13th Division. In these the troops were told that the Turks were holding the Chahailah trenches, that a strong detachment had

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been sent as far as point A. 7. from these trenches down the Bait Issah trench, and that the enemy were in occupation of some folds of the ground to the south-west of this point. The 39th Infantry Brigade was then detailed to relieve the troops standing on the right of the 1/9th Gurkhas; the 38th Infantry Brigade, which had again come under his orders, was to take up the remainder of the frontage occupied by the 7th and 9th Infantry Brigades; the 40th Infantry Brigade was to move to the neighbourhood of the Narrows and act as divisional reserve; and the artillery with the division was to close up to Marsh M. Details as to the reliefs were to be arranged between brigadiers, and commanding and staff officers were also to be sent into the trenches for the purpose of making such local adjustments as might be necessary.

As has been pointed out above the Turks had adopted a singularly passive attitude in the fighting that had taken place since the 5th April, although a more aggressive policy had been disclosed on the 17th. The British, however, had now worked so far forward that another success would bring them almost into touch with the garrison of Kut-al-Amarah. The moment for the delivery of a counter-attack had clearly, therefore, arrived; and if the Turks decided to make one it was not improbable that the enterprise would be undertaken during the night of the 17th/18th April, when it might be supposed by the enemy that the positions of the British would not have been fully consolidated. Should the Turks advance when the various reliefs that have been enumerated above were in progress the British would, in many ways, be in an unfavourable situation. Large numbers would certainly be present in the trenches, but responsibility as regards command would be divided, confusion could hardly be prevented, and the fact that some units would be retiring while others would be moving forward would be disadvantageous. Another drawback to the method which had been adopted by the British is that troops who have been warned that they will shortly be relieved can hardly be expected to show much energy in entrenching, particularly when

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the day is hot, the previous night has been passed under arms and further attacks are shortly to be undertaken by the men.

At 5 P.M. General Gorringe sent out instructions modifying his earlier plan, and it was now stated that the 13th Division would, with the support of the Corps Artillery, first attack the Chahailah trenches along a frontage extending for about 1,500 yards from the Tigris. Brigadier-General White, the commander of the Corps Artillery, was placed under the orders of General Maude for this operation, and, after consulting with him, General Maude was at 9 P.M. to submit to the headquarters of the Corps his plan for the attack. The main body of the 3rd Division was to be prepared to support the brigade and battery that had been ordered to occupy the trenches lying to the south of the Triangle.

This order did not affect the instructions which had been issued by General Keary, but at about 5-30 P.M. he learnt from the 7th Infantry Brigade that the Turks had cut the embankment in front of the Chahailah trenches, and that water was flowing in some volume past the advanced post which was being held by the 89th. If the enemy made an attack at all it would therefore probably be delivered from a south-westerly direction. General Fowler had meanwhile moved his men to the Triangle, and when he reached it at about the same hour he heard that the enemy were in occupation of the trenches of which possession was to have been taken by the 37th Infantry Brigade. Fowler considered it advisable, therefore, to wait until dusk before making a further advance; but at 7-30 P.M., as his troops were about to proceed, reports were received that the enemy were making a strong counter-attack against the 7th and 9th Infantry Brigades, and it was consequently decided to halt and await further information.

Towards evening news had meanwhile been communicated by wireless from Kut-al-Amarah that a column of troops estimated to be about 1,400 strong was marching in the direction of the Dujailah Redoubt. Information had also begun to come in from the

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battalions of the 7th and 9th Infantry Brigades that the enemy were massing men about a mile to the south-west of the British position, and a force of cavalry had been seen in addition a couple of miles away to the south. Shortly before 6 P.M., that is about half an hour before sunset, when a number of officers of the 39th Infantry Brigade were in the lines of the 7th Infantry Brigade for the purpose of arranging details as to the relief, the enemy's guns began to register on the trenches that were being held by the 7th and 9th Brigades. The transport of the 38th Infantry Brigade, which was near Rohde's Picquet, was also now shelled by from two to four Turkish guns that were firing from a southerly direction. At sunset a heavy bombardment was commenced on the 7th and 9th Brigades. Warning was then sent to the British artillery that an attack was imminent, a barrage was at once put down in front of the positions, and the officers of the relieving units went off to join them.

A half-moon was shining on the evening of the 17th April and, at about 7 P.M., long lines of Turks could therefore be dimly distinguished as they advanced from the west and south-west. The attack fell first on the 9th Infantry Brigade, the two guns that had been captured were lost, and the advanced company was driven back on the attenuated line held by the 1/1st and 1/9th Gurkhas. Both of these battalions were soon so hard pressed that it became necessary to make demands on the head-quarters of the Brigade for reinforcements and ammunition. The ammunition was despatched from a dump that had been formed by the 8th Infantry Brigade, under escort of a company of the 47th Sikhs, and this company was replaced in the line by one of the Manchester Regiment. At the same time Lieutenant-Colonel Campbell ordered the Highland Light Infantry to march to the assistance of the Gurkhas, General Egerton placed the 123th at the call of the 27th Punjabis should they be in difficulties, and General Edwardes moved the 2nd Rajput Light Infantry to the support of the 59th. On hearing what was taking place

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General Keary also sent a message asking the commander of the 13th Division to expedite the advance of the troops that were to relieve the 3rd Division, as this had now no reserves in hand. General Maude accordingly gave orders that two battalions of the 38th Infantry Brigade were to move to the Twin Pimples, that the 39th Infantry Brigade was to support the 7th Infantry Brigade, and that the 40th was to proceed forthwith to the Narrows.

It seems that the company of the 47th Sikhs and a few men of the Highland Light Infantry arrived at the front just when the Gurkhas were overwhelmed by the swarms of Turks. The left of the 27th, the 128th who had also just reached the firing line, as well as the remainder of the Highland Light Infantry and the 93rd were then carried away by the enemy's onrush. The bulk of the men of the 9th Brigade fell back across and to the north of the Counter Canal, and the Turks in pursuing them captured five of the machine guns that had been placed in the canal by the 8th Infantry Brigade. The enemy, however, followed the British in a crowd without either order or cohesion, and their forward impulse was in consequence at once checked by the steady fire of a few men who had been assembled at the headquarters of the 9th Infantry Brigade. On coming soon afterwards under the shells of our batteries, to which information as to what had occurred had now been passed by the observers, the hesitation of the Turks was converted into flight and the whole mass retired for cover to the Counter Canal and the trenches near the Twin Pimples. Taking advantage of the relaxation of the enemy's pressure the majority of the troops of the 9th Infantry Brigade now rallied on the frontage from which the attack had been delivered in the morning; and the Highland Light Infantry were subsequently sent to reinforce the 47th Sikhs who were still holding on to the trenches to the south of the Twin Pimples.

On the British right the Turks penetrated as far as the headquarters of the 7th Infantry Brigade at the salient at A. 3., and General Egerton was obliged to withdraw northwards with a few

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men whom he had been able to collect. All the communications had broken down, but fortunately Egerton now fell in with portions of the 27th and one company of the 128th—the remainder of the 128th had meanwhile again advanced to the assistance of the Connaught Rangers. A successful counter-attack was at once launched under his leadership, in the course of which the brigade headquarters and the trench for some distance to the south of them were recaptured. Messengers were then sent to the Connaught Rangers and 89th, and the news was obtained that the latter were short of ammunition but had repulsed the Turks who had fallen back for a short distance and were engaged in entrenching. The Connaught Rangers, who were also in need of ammunition, had judiciously brought their machine guns from the right to the left of their line at the commencement of the attack, the time required for this transfer having been gained by the skill and valour with which the bombers of the battalion held off the enemy. The stock of bombs had just been exhausted when the machine guns, which had been placed meanwhile on the banks of two irrigation channels, began to pour bullets down them on to the enemy's troops who were crowding forward in their efforts to rush the position; and in spite of heavy losses the Turks persisted bravely for a considerable period in attempts to reach the machine guns. At 2 A.M. General Egerton decided to draw in the Connaught Rangers, the 89th and 128th; but no sooner had the orders been issued than an officer of the 6th East Lancashire, the leading battalion of the 38th Infantry Brigade, arrived from the headquarters of the 9th Infantry Brigade with the news that 6th East Lancashire, and a portion of the 9th Worcestershire Battalion which had been sent up by the 39th Infantry Brigade, were ready to reinforce the 7th Infantry Brigade.

It was too late to cancel the orders that had been given by General Egerton, and the withdrawal was completed by about 4 A.M. in spite of the enemy's vigorous fire. The Bait Issah trench which was here only about two feet deep, was then

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occupied by the troops, the Connaught Rangers being on the right, then the 89th, next two companies of the Worcestershire which had arrived at 2-30 A.M. and lastly the 6th East Lancashire. The East Lancashire, it may be stated, had after forming under heavy fire in the front trench to the north-east of the Twin Pimples, marched along it. They had next moved northwards in file along the edge of Marsh M until the head reached the headquarters of the 7th Infantry Brigade. The bombers had then at once begun to bomb southwards along the Bait Issah trench, and the battalion advancing behind them had occupied a point within 200 yards of A. 4. where a block was made.

A company of the 9th Royal Warwickshire also attempted to reinforce the Connaught Rangers by moving across Marsh M., but was unable to do so owing to the depth of the water. After the arrival of the East Lancashire and Worcesters, the 27th and 128th were sent back to the area lying to the north-east of the Twin Pimples; and the headquarters of the 7th Infantry Brigade also moved at 4-30 A.M. to the Twin Pimples for the purpose of getting into touch with the headquarters of the 3rd Division. (Map 3.)

Meanwhile two companies of the 6th South Lancashire, which had followed the East Lancashire, had reinforced the 47th Sikhs, and with their assistance the trenches immediately to the south of the Twin Pimples had been cleared of Turks. Another company of the South Lancashire and the bombers of the battalion had then advanced along the Counter Canal to within 400 yards of Point A. 4, and the fourth company was standing at the Twin Pimples. The Highland Light Infantry were relieved at 3 A.M. by the 5th Wiltshire, who had been sent at midnight from the 40th Infantry Brigade, together with the South Wales Borderers, to the support of the 8th Infantry Brigade, and the Highlanders then fell back to the positions that had been occupied prior to the attack. Firing in this part of the field continued during the remainder of the night, but at about 5 A.M. the enemy definitely drew off to the portion of the Bait Issah entrenchment lying to the south of the Counter Canal.

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The attack on the other battalions of the 8th Infantry Brigade did not develop until nearly 10 P.M., when the Turks advanced in several masses from the scrub in front of our lines covered by both violent musketry and the fire of artillery and machine guns. The British picquets at once fell back; and in consequence of the length of the frontage that was being held by the battalions, which could not be filled except by means of groups of men placed at intervals from one another, while only the four machine guns of the 59th were available for its direct defence, the situation at once became precarious.

The enemy maintained a heavy fire throughout the night, and in attempting to reply in an adequate manner the men of the 8th Brigade expended on the average 400 rounds per rifle. Ammunition therefore often ran short, and fresh supplies of cartridges could only be obtained precariously from the area near the Twin Pimples. The attacks of the Turks were frequently renewed, not fewer than five separate assaults being delivered in the attempt to break the British line. Fortunately the enemy's troops did not advance in unison all along the front, the assaults therefore broke down under the bullets that were steadily poured on the Turks; and the infantry also derived practical assistance and moral support from the four guns of the 23rd Mountain Battery, which shelled the zone in front of our trenches that had been registered during the day. A welcome reinforcement of 200 men of the 4th South Wales Borderers and 5th Wiltshire came up in addition not long after midnight, and these were sent to the left of the 59th; and later, as has been stated above, the rest of these battalions reached the headquarters of the 8th Infantry Brigade, and the Wiltshire subsequently relieved the Highland Light Infantry. In the end, then, only one small party of about 150 Turks actually found their way into a gap that existed between the left of the 8th Brigade and the Triangle, and here they remained until daybreak.

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Owing to uncertainty in regard to the positions which were being held by our infantry there had necessarily been some difficulty in regulating the fire of the remainder of the British artillery, General Keary had therefore issued orders at 2-30 A.M., affiliating the 8th and 14th Field Batteries to the 7th Infantry Brigade, and the 2nd and 66th Field Batteries to the 8th and 9th Infantry Brigades. Little could, however, be done as regards co-operation while it was dark, but these batteries and B. 69 and the 1/1st Sussex also, at once bombarded the Turks as soon as it was sufficiently light to enable the observing officers to locate them definitely. As a result the enemy's fire first slackened appreciably, and large crowds of Turks were then forced to break cover from the line of scrub in front of the 8th Infantry Brigade affording a good target to both gunners, infantry and machine gunners. The men who had penetrated into the gap between the 8th Infantry Brigade and the Triangle also suffered considerable loss in making their way out again, and by 6 A.M. the last of the Turks had disappeared from this portion of the British front.

On the left of the 3rd Division the 37th Infantry Brigade had, at about 10 P.M., received orders to close to its right on the Triangle, but these orders had been given on the supposition that the Brigade was at that hour in occupation of the trenches or canals lying to the south of this locality. When the troops had occupied the Triangle, General Fowler, the orders went on to say, was to relieve the 6th Loyals of the 38th Infantry Brigade who were about half a mile from Rohde's Picquet and facing southwards. This relief was not carried out, but eventually the two companies of the Manchester Regiment moved northwards for a short distance. The 36th Sikhs and the 1/2nd Gurkhas were placed in and to the south of the Triangle, half of the latter facing west; and on the left of the Gurkhas were the 1/4th Somerset Light Infantry who were facing south-west and were in touch with the 6th Loyals on whose left were the King's Own. No attack was made by the

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enemy on these positions, but the men were under fire from guns and rifles throughout the night.

After the retirement of the Turks the positions occupied by the remainder of the British troops were generally as follows: In the portion of the Bait Issah entrenchment lying to the north of the Counter Canal and between Points A. 1. and A. 4. there were from right to left the Connaught Rangers, the 89th, the 9th Worcesters and the 6th East Lancashire. The Turks held the junction of the Counter Canal and the Bait Issah trench, and also the entrenchments to the south-west of this locality. The 6th South Lancashire were in possession of more than half of that portion of the Counter Canal which ran to the north-west of the Twin Pimples, the 27th and 128th were near them, and the 9th Infantry Brigade were holding the entrenchments in the area marked X-Y. The battalions of the 8th Infantry Brigade were in the trenches to the south of the Twin Pimples which had so successfully been defended by them, and the 4th South Wales Borderers and 5th Wiltshire were not far from the Boil. The 9th Royal Warwickshire and 7th North Staffordshire were holding the line to the east of Marsh M, and the 8th Cheshire and 8th Royal Welch Fusiliers, who had been under a heavy unaimed fire all night, had excavated a line of trenches to the east of the Narrows. The Corps Artillery were on the right bank in the area to the south of Sannaiyat, but B. 69 Howitzer Battery and the 1/1st Sussex Battery were a mile and a half further to the south and were standing to the east of Cholera Creek, and the 23rd Mountain Battery was behind the left centre of the 8th Infantry Brigade. The two squadrons of the 33rd Cavalry that had been at the Twin Canals had been ordered to watch the left flank. (Map 3.)

At 6 A.M. on the 18th April, General Gorringe came to the advanced headquarters of the 3rd Division, and after discussing the situation he issued orders at 7-45 A.M. to the following effect. From 8 A.M. the Corps Artillery would come under the commander of the 13th Division, who would also take over the area extending

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to the north of a line drawn from a point about 1,200 yards south of the Twin Pimples, where the left centre of the 8th Infantry Brigade was standing, through the Narrows. The causeway at the Narrows and the area to the south of the line mentioned above would be under the commander of the 3rd Division, who would withdraw his troops from the northern area and dispose them, and also the 36th Infantry Brigade which would be attached to his division, so as to protect the left and left rear of the 13th Division and hold the Triangle.

Generals Maude and Keary accordingly issued instructions for the 39th Infantry Brigade, some 1,400 strong, to which the 6th East Lancashire and 6th South Lancashire, each now less than 500 men, were to be attached, gradually to relieve the troops of the 3rd Division that were standing to the north of the Twin Pimples. At the same time the 40th Infantry Brigade, was to take over the residue of the frontage with its 1,800 men. The two remaining battalions of the 38th Infantry Brigade, which could altogether muster about 1,000 rifles, were to move to a position to the south-west of the Narrows, and were to form the divisional reserve. The 36th Infantry Brigade, which had about 1,500 men in the ranks and had been brought forward during the night from Mason's Mounds, was to relieve the left of the 8th Infantry Brigade and the 37th Infantry Brigade, and the latter was to place a line of outposts in position eastwards from the left of the 36th Infantry Brigade to Marsh N. The infantry brigades of the 3rd Division were to concentrate at Rohde's Picquet, the wheeled transport being grouped to the south of the Narrows. The artillery of the 3rd Division would be replaced by that of the 13th when the infantry reliefs had been completed. Brigades in the front line were to apply to the headquarters of the 13th Division if the support of artillery fire were required.

The 18th April was exceptionally hot with a strong wind which blew up clouds of dust. Turkish cavalry with 4 guns and a few infantry hung about the Jumailiat Ridge all day, and there was

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some ferrying of troops from the left to the right bank of the Tigris; but little fighting took place except in the area to the north of the Narrows, where the Connaught Rangers, the 89th, the Worcesters and East Lancashire were holding the narrow and shallow trench behind which lay Marsh M. The men had few tools, there was a shortage of bombs and ammunition, and there were no communication trenches along which these could be brought forward. Owing to the fire of the Turks replenishment by moving across the open was precarious, and, in addition, the Rangers and 89th were exhausted after their prolonged exertions.

At 11 A.M. notice was received from the headquarters of the 3rd Division that the right bank of the Tigris was to be divided into two areas as mentioned above, and that the ground from the Narrows northwards would gradually be taken over by the 13th Division, after which the troops of the 3rd Division would concentrate at Rohde's Picquet. Instructions were also issued to the 6th East Lancashire and 6th South Lancashire that they were to try and regain the locality where the Counter Canal joins the Bait Issah trench. The Turks, who were busily converting the trenches that had been made by the British, kept up throughout the morning a vigorous fire for the purpose of covering their operations, and so heavy was the musketry that, as has been pointed out above, movement in and behind the British lines was almost out of the question. A supply of bombs was nevertheless carried to the forward trenches by men who waded forward knee deep in the Cholera Creek, and bombing attacks were then initiated by the 6th East Lancashire at 1 P.M. and 4 P.M. Although some ground was gained in this manner during the afternoon it was lost again in the course of a Turkish counter-attack, and the Turks also made several other efforts during the day to advance northwards. The South Lancashire failed in an attempt to push back the enemy along the Counter Canal, for the Turks strongly bombarded it and also the trenches near the Twin Pimples.

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Early in the afternoon General Maude had issued orders that at nightfall, after a heavy bombardment, an effort was to be made by the 13th Division to regain the areas that had been lost during the previous night. When it was ascertained that the enemy's musketry had been such as to preclude the relief of the Connaught Rangers and the 89th until darkness had come on, that while both units were exhausted and unfit again to make an assault, the Rangers could produce about 600 men and the 89th less than 200, General Gorringe cancelled the order for the attack; but General Maude gave directions that a bombardment of the Turkish positions was to be delivered in the dusk for 15 minutes.

This bombardment, and the enemy's reply with guns and some form of trench mortar, were so vigorous and impartial as to cause both Turks and East Lancashire to fall back from the bomb-head to safer localities. And when the shelling ceased the trench and bomb-head were reoccupied by two companies of the 7th North Staffordshire, the men of which had been dribbled forward during the afternoon into the trenches near A. 3. The relief of the two battalions of the 7th Infantry Brigade was then carried out, and at about midnight this brigade moved to Rohde's Picquet.

The 40th Infantry Brigade had meanwhile relieved the bulk of the 8th Infantry Brigade on the morning of the 18th, and had occupied the trenches for a distance of about 1,200 yards to the south of the Twin Pimples, the left being thrown back a little. At the same time the battalions of the 36th Infantry Brigade replaced the 59th Rifles and those of the 37th Infantry Brigade. The headquarters of the 3rd Division had also moved to a locality to the east of B. 69 Battery.

At 9.35 P.M. General Maude circulated orders in regard to further operations by the 13th Division. Patrols, he said, were to be sent out from the trenches that were being held by the 39th and 40th Brigades; and if the Turks had evacuated the line that they were holding, this was to be occupied and also its extension

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southwards. Unless other orders were received meanwhile the Corps and Divisional Artilleries would carry out an intense bombardment, at daybreak on the 19th, against the area extending from Point A. 16. to A. 6.; and machine guns were to be placed both near A. 4. and to the south of the Twin Pimples so as to enfilade this frontage. The infantry of the 39th Brigade, whose left flank was to be secured by the 40th Brigade, were to advance at such a time that the men would reach the line A. 16. to A. 6. at 7-10 A.M., at which hour the guns and machine guns were to lift to areas further to the west and also to the south. After this position had been captured and consolidated, advantage must be taken of every opportunity of gaining more ground. Red flags and screens were to be employed to mark the positions of the troops.

The 5th Wiltshire and 4th South Wales Borderers on the right of the 40th Infantry Brigade began accordingly, after darkness had fallen on the 18th, to entrench a line from the Boil towards the junction of the Counter Canal and the Bait Issah trench, but could not push far northwards until the result of the attack by the 39th Infantry Brigade had been disclosed. Little progress, however, was made on the 19th either by the battalions of the 39th Infantry Brigade or the 6th East Lancashire Regiment, owing both to the presence of inundations, for the Turks had now cut the dykes of some of the canals that lay to the west of Bait Issah, and to the violence of the enemy's fire. Portions of the 9th Worcestershire, 6th East Lancashire and 7th North Staffordshire reached the old Turkish entrenchment running from A. 2. to A. 4.; and the South Lancashire of the 38th Infantry Brigade pushed along the now flooded Counter Canal to within 350 yards of the Bait Issah trench, but this was the limit of their advance. All telephone lines were cut by the enemy's fire, and for some time the result of the attack could not be ascertained. But at 8-30 A.M. when the failure became evident, General Cayley, commanding the 39th Brigade, sent orders that the troops who had advanced from the

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trenches extending from Point A. 1. southwards were to reoccupy them.

Desultory fighting continued during the day, and in the evening the two remaining companies of the 7th North Staffordshire relieved the 6th East Lancashire; and the 7th Gloucestershire, who had arrived from Basrah about 500 strong on the night of the 18/19th, replaced the 6th South Lancashire. The latter had been obliged, owing to the fact that it had filled with water, to leave the Counter Canal and entrench near it, but the 6th Wiltshire of the 40th Infantry Brigade had meanwhile been able to get into touch with them.

With this attack fighting on a large scale came to an end on the right bank prior to the fall of Kut-al-Amarah on the 29th April. Attempts were made for the next two or three days by the 13th Division, but without success, to capture the junction of the Counter Canal and the Bait Issah trench. In the end the line of trenches that had been pushed northwards from the Boil was joined up with those that were occupied by the 39th Infantry Brigade; and the 40th Infantry Brigade also gained some ground to the south of the Boil.

The casualties that were experienced in these operations by the 3rd and 13th Divisions amounted to about 1,650 of all ranks, killed, wounded and missing, of whom 90 were British Officers. The British captured about 180 prisoners, 2 guns and 8 machine guns, but the enemy regained the 2 guns and 5 of the machine guns, and also took 15 machine guns from the Tigris Corps. On the other hand the losses that were suffered by the Turks, who it was thought had put 10,000 men, drawn from the 2nd* and portions of the 35th and 45th Divisions into the attack, were without doubt very heavy, and were probably much greater than those of the British force.

* The 2nd was a division composed entirely of good Turkish troops, and had before the war been trained by the German General Von der Goltz; the 35th comprised Arab troops officered by Turks, and the 45th consisted of Turkish troops in the main.

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APPENDIX.

Order of Battle of the Tigris Corps. (15th April, 1916.)

Headquarters of the 3rd Indian Corps, Lieut.-General Sir G. F. Gorringe.

Headquarters of the 3rd Division, Major-General H. D'U. Keary.

7th Infantry Brigade, Major-General R. C. Egerton.

1st Connaught Rangers and drafts of the Queen's Own.

27th Punjabis.

89th Punjabis.

128th Pioneers.

8th Infantry Brigade, Brigadier-General S. M. Edwardes.

1st Manchester Regiment.

2nd Queen Victoria's Own Rajput Light Infantry.

47th Sikhs.

59th Scinde Rifles.

9th Infantry Brigade, Lieut.-Colonel L. W. Y. Campbell.

1st Highland Light Infantry.

1/1st King George's Own Gurkha Rifles, The Malaun Regiment.

1/9th Gurkha Rifles and drafts of 2/7th Gurkha Rifles.

93rd Burma Infantry.

37th Infantry Brigade (attached), Brigadier-General F. J. Fowler.

1/4th Somerset Light Infantry (Prince Albert's).

1/2nd King Edward's Own Gurkha Rifles (The Sirmoor Rifles).

36th Sikhs.

Brigade Signal Section.

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4th Field Artillery Brigade, eighteen 18-pounders, and four 5 inch howitzers, 7th, 14th and 66th Field Batteries, and A. Battery, 69th Howitzer Brigade; and Ammunition Column.

60th Howitzer Battery, six 4, 5 inch howitzers.

23rd Mountain Battery, less one section, four 10-pounders.

One squadron 16th Cavalry.

34th Sikh Pioneers.

20th and 21st Companies of Sappers and Miners.

3rd Divisional Signal Company.

3rd Mobile Veterinary Section.

Supply Units.

Headquarters of the 7th Division, Major-General Sir G. J. Younghusband.

19th Infantry Brigade, Brigadier-General E. C. Peebles.

Composite Highland Battalion of 2nd Black Watch (Royal Highlanders) and 1st Seaforth Highlanders.

28th Punjabis.

92nd Punjabis and drafts of the 66th and 67th Punjabis.

125th Napier's Rifles and drafts of the 104th, 110th and 120th.

21st Infantry Brigade, Brigadier-General C. E. de M. Norie.

Composite English Battalion of drafts of the Norfolk and Dorsetshire Regiments.

6th Jat Light Infantry.

9th Bhopal Infantry and drafts of the 7th and 8th Rajputs.

Composite Mahratta Battalion of the 103rd, 105th, 110th and 117th.

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7th Division—(*concluded*).

28th Infantry Brigade, Lieut.-Colonel A. M. S. Elsmie.

2nd Leicestershire Regiment.

Provisional Battalion of the Oxfordshire and Buckinghamshire Light Infantry.

51st Sikhs and drafts of the 22nd Punjabis.

53rd Sikhs and drafts of the 24th Punjabis.

56th Punjabi Rifles.

66th Field Artillery Brigade, sixteen 18-pounders, less one section. A. B. D. Batteries, C. Battery, less one section.

72nd and 77th Howitzer Batteries, each four 5 inch howitzers.

One squadron 16th Cavalry.

107th Pioneers.

3rd Company, Sappers and Miners.

7th Divisional Signal Company.

7th Mobile Veterinary Section.

Supply Units.

Headquarters of the 13th Division (New Army), Major-General F. S. Maude.

38th Infantry Brigade, Brigadier-General J. W. O'Dowda.

6th King's Own Regiment (Lancaster).

6th East Lancashire Regiment.

6th The Prince of Wales' Volunteers (South Lancashire).

6th The Loyal Regiment (North Lancashire).

39th Infantry Brigade, Brigadier-General R. de S. Cayley.

9th Royal Warwickshire Regiment.

9th Worcestershire Regiment.

7th North Staffordshire Regiment (The Prince of Wales).

7th Gloucestershire Regiment (at Basrah).

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13th Division—(*concluded*).

40th Infantry Brigade, Brigadier-General A. C. Lewin.

8th Royal Welch Fusiliers.

8th Cheshire Regiment.

4th South Wales Borderers.

5th Wiltshire Regiment.

9th Field Artillery Brigade, eighteen 18-pounders.

19th, 20th and 28th Batteries, and Ammunition Column.

D. Battery, 69th Field Howitzer Brigade, four 5 inch howitzers.

55th and 56th Field Artillery Brigades had not reached the front.

72nd and 88th Field Companies.

8th Welch Regiment (Pioneers).

13th Divisional Signal Company.

13th Mobile Veterinary Section.

Supply Units.

Corps Troops:—

6th Cavalry Brigade, Brigadier-General R. C. Stephen.

14th King's Hussars.

4th Cavalry.

7th Hariana Lancers (less detachment in Kut-al-Amarah).

33rd Queen Victoria's Own Light Cavalry (less detachments in Kut-al-Amarah and at Nasiriyah).

S. Battery Horse Artillery, four 13-pounders.

Signal Troop.

35th Infantry Brigade, Brigadier-General G. H. B. Rice.

Composite Battalion of 1/5th Buffs and 1/4th Hampshire.

Composite Battalion of 37th and 41st Dogras.

97th Deccan Infantry.

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Corps troops—(*concluded*).

36th Infantry Brigade, Brigadier-General G. Christian.

1/6th Devonshire Regiment.

26th Punjabis.

62nd Punjabis.

82nd Punjabis.

41st Infantry Brigade, Brigadier-General A. Cadell.

1/4th Devonshire Regiment.

2/4th Gurkhas.

1/8th Gurkhas.

45th Sikhs, less one company.

3rd Brahmans, less one company.

One Company, 12th Pioneers.

One Company, 67th Punjabis.

One troop, 16th Cavalry.

13th Field Artillery Brigade, eighteen 18-pounders.

2nd, 8th and 44th Field Batteries, and Ammunition Column.

69th Field Howitzer Brigade (less one Battery), twelve 5 inch howitzers, A. B. and C. Batteries and Ammunition Column.

61st Field Howitzer Battery, six 4·5 inch howitzers.

2/86th and 2/104th Heavy Batteries, each four 60-pounders.

1/104th Heavy Battery, one section, two 5 inch guns.

One 6 inch howitzer.

1/1st and 1/3rd Sussex Field Batteries, each four 15-pounders.

Two Naval 12-pounder Anti-aircraft guns.

7th Divisional Ammunition Column.

3rd Divisional Ammunition Column.

12th Company, Sappers and Miners, less one section.

13th Company, Sappers and Miners.

64th Pioneers, less one company.

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Field Troop, Sappers and Miners.

Bridging Trains.

Army Corps Signal Company.

12th Divisional Signal Company, less one section.

Three Pack Wireless Stations.

Medical Units—

Eight British Field Ambulances. Three Combined Field Ambulances. Six Indian Field Ambulances. One Combined Clearing Hospital. Two Sections, Cavalry Field Ambulance. One Indian Cavalry Field Ambulance. Two Sections, Combined Cavalry Field Ambulance. Two Sanitary Sections.

Two Field Veterinary Sections.

One Advanced Remount Section.

Supply Units.

Air-craft—

One Flight Royal Naval Air Service.

A., Flight 30th Squadron, Royal Flying Corps.

Naval Vessels—

Mantis, carrying two 6 inch guns, two 6 pounders, and six Maxims.

Mayfly, Sawfly, Stonefly, Grayfly, Greenfly, Flycatcher, each carrying one 4 inch gun, one 6-pounder and four Maxims.

Minesweepers, etc.



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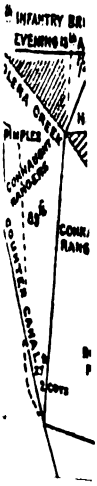
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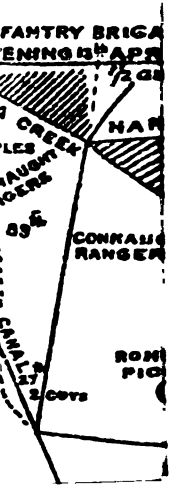
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SOME NOTES ON THE MIDDLE EAST AND CENTRAL ASIA, APRIL TO AUGUST, 1923.*

An officer of the General Staff, A. H. Q., India.

1. The five months with which these notes deal have seen in the signature and ratification of the peace treaty between the Allies and Turkey an event which is bound of necessity to react favourably for British interests throughout the area under review. For the continued existence of a state of war between Britain and Turkey gave to anti-British agitators throughout the Middle East an excellent basis for their propaganda and was a valuable asset to the Moscow Government in its campaign against British influence and prestige in Moslem countries. The general realisation that peace was assured had already had its effect on the success of Russian inspired agitation in the early months of this year, and there has for the most part been a steady improvement in the attitude of Moslem peoples towards Britain ever since. The future of Turco-British relations, however, lies largely in Turkish hands, and it is still too early to divine what form the policy of the Angora Government will take. The recent progress of events gives little definite indication of what course Mustapha Kemal and his supporters intend to adopt by reason of the fact that during the past two months they have been much absorbed with the internal affairs of their country, a pre-occupation, which, now that the Treaty of Lausanne has been ratified by them, bids fair to overshadow all other matters in their minds for some little time to come.

2. On April 23rd the Lausanne Conference, which had broken up at the beginning of February without having come to any definite conclusion, was resumed and commenced work afresh on the disputed points of the draft treaty. Matters progressed

* Recent events have altered the situation as described in this article, but no attempt has been made to change the author's original draft. — ED.

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slowly, but by the beginning of July agreement had been reached on all points at issue. During the final drafting of the text several fresh differences arose, but these were successfully settled and on July 24th the Treaty was signed. Its terms have been characterised in the British press as humiliating, and there is no doubt that it was only by giving way on several points of importance that the Allies succeeded in attaining the peace which they desired at Lausanne. None of the Allied Powers were prepared to face another war, nor were the points conceded worth the expenditure which a war would have entailed. Moreover from these concessions the Turks gain little, unless they are prepared to set their house in order, which in itself would be a great advantage to the Allies. Against the view that everything has been sacrificed by the Allies in order to obtain peace must be set the fact that peace has at last been obtained, and that this mere fact, which, as far as the Turks are concerned, has but a local effect, is an estimable boon to the Allies, whose far-reaching interests the continuance of war had deeply affected. The resumption of trade with Turkey is in itself an obvious advantage to the Allies, while the diminution, already referred to, of the activities of agitators, honest or dishonest, in their spheres of interest and dependencies is bound in time to cause a reaction favourable to them.

3. The Angora Government on August 23rd ratified the Treaty of Lausanne by a large majority, and, as a result, under the terms of the treaty the Allied forces of occupation have already commenced their evacuation which must be completed in six weeks, *i.e.*, by October 4th. Thus one of the British overseas commitments will shortly disappear. But although British troops will no longer be seen on the banks of the Dardanelles and the Bosphorus, the memory of their presence will remain for some time to come; for the action taken by the British Government in showing their determination at the end of 1922 to resist by force, if necessary, the further advance of the main

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Turkish armies in pursuit of the defeated Greeks, coupled with the tact of the British Commander, Lieut.-General Sir Charles Harington, and the exemplary behaviour under most trying circumstances of his troops, has restored British prestige to a high level in Turkey.

4. The new Turkey, freed from the incubus of the Arabian dependencies, which were a source of little gain and much expense to the old Turkish Empire, has by the Treaty of Lausanne been virtually recognised as capable of administering its own affairs on European lines. It is a compact country whose inhabitants for the most part possess the advantage of a common nationality; at its head at the present time are a number of young, enlightened and energetic men, whose patriotism enabled Turkey to obtain from the Allies favourable terms after the crushing defeat inflicted on her in 1918. Mustapha Kemal, the leading figure, has shown himself a statesman of no mean order. These advantages are, however, overshadowed by serious disadvantages. Firstly, the Turkish finances are at a very low ebb. The country, however, possesses considerable, if undeveloped, wealth, and provided that the Turks are ready to allow an influx of foreign capital on reasonable terms, such capital seems likely to be forthcoming. Already a large American syndicate has obtained far-reaching concessions from the Angora Government, and British and other companies are following in its train, while it is realised in Turkey that it is from Britain alone that there is any likelihood of it being possible to raise a loan for internal development. Secondly, the action of the Angora Government in abolishing the Sultanate has caused much heartburning among the orthodox Turks, and may develop into a powerful lever, if cleverly handled, in the hands of those factions in Turkey which are opposed to the change. Thirdly, there are innumerable petty jealousies among the leading men in Turkey to-day. While the whole country was united against an external danger, these remained in the background, but with the advent of peace they are coming more and more into prominence.

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A dictator like Mustapha Kemal has of necessity created many enemies, and, although in the recent elections to the National Assembly he has taken most unconstitutional measures to reduce the numbers of successful opposition candidates to a minimum and has removed several possible rivals from positions in which they might prove a danger to him, his position is not by any means so impregnable as he could have wished, and it is to be feared that the newly-elected Assembly may devote itself to intrigue and counter-intrigue rather than to the most necessary business of setting the Turkish house in order.

5. While, however, the task of internal reconstruction must of necessity be the primary interest of the Turkish Government, the form which their foreign policy is likely to take is a subject of greater importance to us, and one regarding which it is particularly difficult to form any conclusion from recent events. Relations between Turkey and Russia have of late grown still less cordial. The steps taken by the Angora Government to deal with Communist organisations fostered and inspired by Russia on Turkish soil have caused indignation in Moscow, as also have the activities of Turkish propagandists in Trans-Caucasia. But these protests have as yet apparently not caused the Turks to act less vigorously against the revolutionary elements or to abate their Pan-Islamic activities in Russian territory. The Russians recently sent as their ambassador to Angora the same Suritz who negotiated the first treaty between Soviet Russia and Afghanistan and it is believed that his instructions were to do all in his power to renew the *entente* between Moscow and Angora which came into existence as a direct result of the hostility between the Allies and Turkey. But this capable diplomat has as yet achieved nothing. The Russian attempt to encourage the formation of a Moslem *bloc* under her own guidance still fails to find any support in Turkey, and it is hard to see how Russia can hope to maintain her hold over Turkey, since she has nothing to offer the Turks in return for their friendship.

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The vexed question of the boundary between Turkey and Iraq was not finally settled at Lausanne, but was left over to be decided between Britain, Iraq and Turkey within nine months. of the ratification of the peace treaty. On the northern border of Syria there has of late been some increase in the Turkish armed strength, but not sufficient to warrant any contention that the Turkish intention is to attempt to regain Syria by force of arms. A considerable amount of smuggling of arms from Turkey to the Syrian tribesmen has been taking place, and the raiding activities of irregular bands from Turkish territory have caused the French authorities some trouble.

As regards Turkey's relations with European countries there is no information to show any effort on her part to enter into closer relations with any particular European state. It must, however, again be mentioned that there is every indication that the leading men in Turkey see clearly that it is to Britain only that they can look to obtain the financial assistance without which they cannot hope to further the internal development of their country. There is therefore some ground for expecting that the near future may see Turkey seeking to improve her relations with Britain.

6. Whatever may be the course of the normal Turkish foreign policy there can be no doubt that she will aspire to consolidate her position throughout the Moslem world. Her efforts in this direction among the Moslems of Trans-Caucasia have been referred to above, and her anxiety to form a Turco-Persian-Afghan *bloc* is well known. These efforts continue, and are said to be accompained by attempts by means of pan-Islamic emissaries to cause opinion in Syria, Palestine and Kurdistan to veer round in her favour.

These latter, though able to a greater or less degree to cause annoyance to the British and French, and to keep smouldering resentments still alive, are not at the present time calculated to lead to any definite results. The alliance with Persia and

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Afghanistan is for Turkey an aim of far greater importance. Its consummation is, however, far from easy of attainment; for in the Persian mind hatred of Turkey is deep seated, while Afghanistan is far too jealous of her independence and far too full of exaggerated ideas of her own greatness to become a serious partner in a confederation in which she will have no chance of taking the lead. Treaties may be signed and ratified but their value will be small.

There is one further point of a religious nature which requires to be mentioned. The abolition by the Angora Government of the Sultanate, a step which deprived the Khalifa of all temporal power, is one which has been strongly objected to in many Moslem countries, and Mustapha Kemal has proclaimed that as soon as circumstances permit he will summon a conference of representatives of all Moslem nations to confirm their action. The step in question indeed created more stir outside Turkey than it did among the Turks themselves, and it is important for the Turkish schemes for an Islamic Confederation that the future position of the Khalifa should be agreed upon by such a conference, and that any possibility of a division of opinion in the Islamic world on this subject should be avoided.

7. In Iraq the Turkish menace has disappeared with the conclusion of the Lausanne Treaty and events have progressed a stage further towards making the country independent. The period of duration of the British mandate was fixed in May by the announcement of the protocol to the Anglo-Iraq Treaty, under the terms of which the mandate is to end in four years from the ratification of the peace treaty with Turkey, or on the admission of Iraq into the League of Nations, whichever is the earlier. This announcement has done much to curb wild talk of British designs on Iraq, but has at the same time caused a lack of confidence among some of the tribal Sheikhs who had hoped for a continuance of the British occupation as being preferable in their eyes to the rule of their own countrymen.

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The difficulties in the way of the holding of elections for the first Constituent Assembly have for the most part been overcome, and at the present time the work of completing the electoral rolls is well advanced. The preparations for the elections were, however, marked by an incident, which, though it created less stir in Iraq than might have been expected, has been the cause of much excitement in Persia and elsewhere. One of the leading *ulema* in Iraq issued a *fatwa* denouncing the holding of elections and forbidding all Shiahs to take part in them. For this interference in political affairs he was deported by order of the Iraq Government, and, in sympathy with him, a number of the other Persian *ulema* voluntarily left Iraq for their own country, where their arrival was the signal for an outburst of intense religious feeling. (*Vide* para. 10 below.) In Iraq itself the strong action taken by the Government was generally welcomed.

8. The situation in most parts of southern Kurdistan has considerably improved and Turkish aspirations have been completely crushed for the time being by the successful operations undertaken by regular troops and Iraq Levies in April and May which resulted in the re-occupation of Rowanduz on April 22nd and of Sulaimania on May 16th. The pro-Turk tribesmen were defeated and punished, the Turkish troops and agents were driven out of the country and the column on its withdrawal from Rowanduz left behind a Qaimaqam to run the civil administration of the district under the orders of the High Commissioner for Iraq at Baghdad. In Sulaimania, however, the local inhabitants were too feeble and disunited to be capable of setting up an administration of their own under British direction, and, as soon as the column left the town, the rebel Shaikh Mahmud returned to it and assumed control He has, as a result, been allowed to stay there on condition that he confines his activities within given limits. The district of Rowanduz, now for the time being under the control of the High Commissioner, divides him from

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the Turks from whom he might hope to obtain assistance; for the moment too the Turkish activities in the direction of southern Kurdistan are at an end, though it is reported that they are about to turn their attention to it at once.

9. All hopes of Persia's future rest on a combination of the War Minister, Reza Khan, and the American Director-General of Finance. These two have been working together on parallel lines, but they have not yet succeeded in producing any noticeable change in the general condition of Persia. Though, however, their efforts have not as yet been attended by startling results, they have undoubtedly had considerable success in their efforts to strengthen Persia in spite of all obstacles, and may in time reap the fruits of their labours.

The Director-General of Finance in his attempts to balance the budget by reducing expenditure, by avoiding as far as possible the almost inevitable misappropriation of revenue to which all Persian officials are accustomed, and by ensuring the regular payment of taxes, has incurred considerable odium. The employés dismissed by him for reasons of economy have banded together to decry his work; the wealthy landowners and others, who for years past had managed to avoid all payment of taxes, have started an agitation against him as a revenge for his action in seizing their property in settlement of arrears of taxation; while the Russians, always ready to oppose any step which is calculated to draw Persia out of her present chaotic condition, have fanned the flames of opposition to his work. It was only to be expected, the Persian character being what it is, that once it was realised that the American advisers meant business, they would have obstacle after obstacle placed in their way; but their difficulties have been still further increased by the difficulty of raising a loan outside Persia to provide money to meet current expenditure. It had been hoped that it would be possible to raise such a loan on the security of the oil concessions in Northern Persia, but the anti-foreign bias of most Persians, coupled with the

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ceaseless intrigue of individuals anxious to benefit themselves, has so far prevented any company or syndicate from accepting the terms offered for the grant of these concessions ; and accordingly no loan is as yet forthcoming.

The War Minister, in pursuance of his policy of bringing the whole of Persia fully under the control of the Central Government, and of breaking the power of the tribes, has joined issue with two of the powerful and semi-independent tribal groups in the country. In April he commenced operations for the disarmament of the Shahsevan tribes of the north-west and within a few weeks had collected a number of rifles from them which far exceeded his wildest expectations. It is open to doubt, however, whether the disarmament of this group, which inhabits an area bordering on Russia, was wholly wise, in that it removes a powerful bulwark against Russian infiltration into Persia. At the same time this step made possible the collection of taxes from a number of tribes which for many years past had escaped all taxation. Reza Khan's dealings with the Bakhtiaris in the south-west were from the British point of view a highly precarious undertaking. He was determined to exact retribution from the Bakhtiari Khans for their complicity in the Shalil affair in August, 1922, when a small Persian detachment on its way to Arabistan was cut up by tribesmen on the road, and issused an ultimatum to the Khans demanding the payment of 4,80,000 tomans as compensation for the families of those killed in the action at Shalil and the handing over of all arms given to them by the Persian Government on various occasions. The Khans refused to comply with the ultimatum and the War Minister began to collect troops at Isfahan to enforce his demands. While there was no question that in principle his intention of punishing the Bakhtiaris was fully justified, grave fears were entertained that operations against these tribesmen might lead to fighting in the neighbourhood of the oil fields and their possible destruction, an event which would entail serious damage to British interests and

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considerable pecuniary loss in the matter of royalties to Persia. In the end, however, the Khans, who, owing to internal dissensions, were in a poor position to oppose the advance of regular troops, agreed to compromise in the sum of 1,50,000 tomans. This compromise was accepted by the War Minister, who intends to delay the carrying out of the second part of his demands, the disarmament of the Bakhtiaris, until he has disarmed their turbulent neighbours, the Lurs. While therefore the danger to the oil fields has been averted, Reza Khan has obtained a useful sum of money for the Persian treasury and has gone far towards breaking the power of the Bakhtiari Khans. There are still several other tribal groups which require to be dealt with, but Reza Khan has made very considerable strides in the carrying out of his ambition of making the Tehran Government's power felt in every corner of Persia.

Progress in the improvement of the Persian Army continues. A batch of 47 officer students has been sent to France for a year's military training. A new cadet college for training young officers has been opened in the capital. A conscription bill has been introduced into the Mejlis and will be considered by the new Mejlis among its first items of business when it meets. This bill provides for the replacement by universal service of the old Bonitcheh system of obtaining recruits, by which each village, district or tribe was supposed to furnish its quota according to a long out of date revenue assessment This measure should enable the army to be recruited up to its full strength of 50,000 without causing any undue hardship to individual areas.

10. Elections to the new Mejlis commenced in May, and on June 21st the old Mejlis completed its term of office. It will be some time before the names of all the new deputies are announced, but there is good reason to expect that, when the results of the elections are finally issued, it will be found that all the Russian attempts by means of money and propaganda to secure the election of their own nominees, will have met with

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little success, just as their efforts to secure the nomination of a pro-Russian Prime Minister have so far proved abortive.

As regards Anglo-Persian relations, the late Prime Minister, Mustaufi-ul-Mamalek, had before his fall shown definite signs of working to improve the existing relations between the two countries. During the past two years British prestige in Persia had been at a low ebb, and the fear of a British desire to absorb Persia was strong in the minds of a large section of educated Persians, always prone as a result of long experience to mistrust all foreigners. The policy of non-interference in Persian affairs recently adopted by the British Government had steadily made an impression on the Persian mind, and had instilled fresh confidence regarding British policy, when there unfortunately occurred the incident of the Iraq *ulema* already referred to in paragraph 7. Their voluntary departure from Iraq was garbled by the *mullas* and agitators into their expulsion by the British authorities; the matter was turned into a religious cry; anti-British propaganda filled the newspapers; anti-British demonstrations were held in the capital and in most of the provincial towns; the bazaars were closed in protest; and a boycott of British goods was advocated. So much excitement was aroused that the Persian Government became seriously alarmed, and the British Minister at Teheran flew to Baghdad in order to try and arrange a compromise with the Iraq Government. As yet no satisfactory solution of the *ulema* question has been reached, though to some extent the excitement has already subsided. But, even if the storm blows over without delay, its effect on British prestige in Persia will be felt for some time to come.

This event has proved a blessing to the Russians in Persia, whose prestige had suffered severely as a result of their acceptance of the British demands, contained in a note presented at Moscow on May 9th, for the cessation of anti-British propaganda in the Middle East, and also by reason of their failure to conclude a

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commercial treaty with Persia. At the back of much of the agitation in support of the *ulema* could be traced the hand of the Russian Legation in Teheran, and, as British prestige declined, so Russian prestige advanced. This is likely, however, to be but a temporary advantage to them, for mistrust of Russia is very deep-seated in the Persian mind, and, while it is reasonably probable that the recent anti-British outburst in Persia will soon subside, the course of negotiations for the Russo-Persian trade agreement up to date give little reason for expecting any satisfactory results from them. The attitude of the Russians has been to try and obtain every advantage for themselves, while yielding not an inch to the Persian point of view. The Russian methods of trade have succeeded in crippling almost wholly the economic life of Northern Persia, and for any Persian Government to yield to the inclusion in a new agreement of trading conditions on the terms still demanded by Russia would be to acquiesce in the exploitation of their country for the benefit of Russia. The continuance of these unsuccessful negotiations, even if unattended by any other Russian diplomatic or propaganda *demarches* unfavourable to Persia, can only tend to increase the dislike felt by Persians for their northern neighbour.

As regards propaganda and underground agitation in Persia, the Russians have, since the British note of May 9th, apparently adopted a policy of caution, but it remains to be seen how long this will continue.

11. Russian Turkistan during the past five months has been the scene of few events of importance. Interest has centred entirely round the rebel operations in Bokhara and Ferghana and the concentration of Russian troops in those districts. The rebel movement in Bokhara had since Enver Pasha's death gradually lost strength in spite of the attempts of his successor, Haji Sami Bey, to instil new life into it; and the latter's control over the various rebel leaders had steadily decreased till in July he gave up his difficult task and crossed into Afghanistan. In

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Bokhara, as in Ferghana, however, the rebel attacks on Russian posts and communications have continued in varying measure.

Early in May the Moscow Government decided to send additional troops to Turkistan, and in the same month Kameneff, the Commander-in-Chief of the Red Army, and Znamensky, head of the Red Air Force, visited Tashkent and Bokhara. The arrival of fresh troops, which occurred simultaneously with their visit, and almost immediately after the presentation of the British note at Moscow, was announced as a measure connected with the hostile policy of Britain towards Russia. The size of the present concentration of troops in Bokhara certainly gives the impression of an intention on the Russian part to do something more than merely crush the local rebel movement. Seeing, however, that the plans for this concentration must have been matured before the presentation of the British note, the idea that it had any connection with this note can be dismissed at once. The distribution of the troops along the Central Asian Railway and the Oxus may point either to a concerted movement from north, west and south against the rebels in Eastern Bokhara, or equally to preparations for a threat to Afghanistan. On previous occasions the Russians, finding that the demands they had made to the Afghan Government through their Minister in Kabul were not complied with, have concentrated troops on the Afghan border and thus quickly brought the Amir to reason. But on the present occasion Russo-Afghan official relations are less unfriendly than usual, and, as far as can be ascertained, there were at the time the present concentration began no recent Russian demands with which the Afghan Government had failed to comply.

Moreover the strength of the concentration close to the Afghan border, amounting to some 75,000 rifles in all, is comparatively insignificant compared with the numbers which would be required for a successful advance on Kabul. There is another factor too which militates against the likelihood of Russia invading Afghanistan at the present time. The Soviet Government

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has long proclaimed itself the "supporter of oppressed nations," the "emancipator of the East" and such like. Any attack by Russia on Afghanistan would give the lie to such protestations, already deeply mistrusted throughout Moslem countries. Setting aside then the possibility of Russia threatening to attack or actually attacking Afghanistan, there remains the conclusion that the present concentration in and around Bokhara is solely for the purpose of crushing once and for all the rebels in that area. The only argument against this conclusion is the size of the concentration for the task in hand; this, however, may be explained by the fact that the efficiency of the Red Army has not even yet reached a very high level and it has probably been found by bitter experience that it is necessary to employ brigades where battalions of first-class troops would be sufficient.

Despite the decrease in the strength of the rebels and their lack of cohesion it cannot be expected that, even with their present forces, the Russians will be able to crush them and restore order in Bokhara and Ferghana in any short period. The large area and mountainous nature of the country from which the rebels operate and to which they return after lightning raids on Russian communications and posts favour the defence, and although there is little likelihood of the rebels again becoming a serious menace to the Russian hold on Turkistan, it is unlikely that their strength will be entirely overcome during the campaigning season of the present year.

12. The Amir of Afghanistan is beginning to experience some unexpected and rather untoward results from his enlightened policy. His encouragement of universal education, the conscription of labour for works of public importance, the admission of foreigners to assist in the development of the country, and other measures in keeping with his ambition to increase the greatness of Afghanistan are all unpopular, for different reasons, in the eyes of different sections of his people. To obtain money for the carrying out of these reforms the Afghan army has been

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considerably reduced. Whether in consequence of these reductions or not, there have been more than sporadic manifestations of the traditional Afghan turbulence, public security has greatly diminished, and the internal condition of the country cannot be regarded as satisfactory.

13. Reference has already been made to the note despatched by the British Government to Russia on May 9th, demanding *inter alia* the cessation of propaganda directed against British interests in India and the Middle East. The Russian reply contained assurances that any such propaganda as might have taken place would be discontinued. These assurances appear satisfactory, and there has been a lull in the activities of the Russian propaganda centres. It is scarcely to be expected, however, that the Soviet Government, so long as it professes Communist principles, can afford to forego its chief weapon against the British Empire, which it regards as the main obstacle to the spread of these principles. There is moreover one other cause which would at the present moment in any case have led to a diminution of Russian propaganda in the East. Events in Europe, and especially the Ruhr conflict and its far-reaching effects, appear to the Soviet Government to offer a golden opportunity for the fostering of discontent in Europe as a whole, and more attention is accordingly being paid at present to the exploitation of the existing unrest in the West, especially in Germany, England and France, than to agitation in the East.

14. While, therefore, the conclusion of peace with Turkey has already gone far to allay the mistrust of Britain which has since the war been assiduously fostered throughout the Middle East, the effect of the British note to Russia has caused a general fall of Russian prestige. Increased confidence in the sincerity of British policy is as yet difficult to trace, but in spite of the hollow agitation over the Iraq *ulema* in Persia and the Kenya decisions in India, the foundations of such an improvement have been laid. The position of Russia on the other hand has grown

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still weaker, and it is fair to assume that, as Turkey, freed from her entanglements with the Allies, inevitably turns her attention to the encouragement of Pan-Islamic ideas in other Moslem countries, she will come more and more into collision with Russian interests and aspirations, and the hostility of the countries of the Middle East towards Russia will accordingly tend to increase. Such an occurrence, whatever its effects elsewhere, can only result, as far as India is concerned, in the distraction of Russian attention from India to the task of neutralising the possible effects of the spread of Pan-Islamic ideas.

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(1) Of late books which have been borrowed from the Institution have on some occasions been returned in a damaged condition; particularly, maps have been removed and books thus rendered valueless.

Every volume is checked by the Librarian before issue and, if any defficiency exists, a note made to that effect on the Contents page. It will be necessary in future, in order to safeguard the interests of members as a whole, to hold individual members responsible for any damage done to books beyond fair wear and tear while in their possession.

(2) Particular attention is called to Library Rule No. 7. If a member wishes to retain a book beyond the authorised period, he should notify the Secretary, who will sanction retention if the book is not required elsewhere.

Books are circulated only to individual members by name. They are not loaned to Messes. etc., which subscribe to the *Journal*.

(5) The following books are missing from the Library and cannot be traced:—

(i) Sir Douglas Haig's Command and maps thereto (2 Vols.).

(ii) Philip's Systematic Atlas.

Will the borrowers of these be good enough to return them?

Secretary.

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LEWIS GUNS IN FRONTIER WARFARE.

By Colonel F. S. Keen, D.S.O.

There seem to be a number of officers with considerable experience of frontier warfare who are of opinion that for that particular form of fighting the [illegible]

NOTICE.

The number for February 1914 of the Journal of the Royal United Service Institution is wanting to complete the set in possession of the United Service Institution of India.

The R. U. S. I. is unable to supply this missing copy. The Council of the Institution would be most grateful, therefore, to any member who would be good enough to supply this missing number, on payment or otherwise.

Secretary.

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In every theatre of war from 1914 onwards, with the single possible exception of the N.-W. Frontier of India, the result of the terrific fighting of the World War was to convince men of the devastating effect of the automatic small bore weapon. Any soldier who served against German or Turk will admit that in the attack it was the machine guns of the defence that the infantryman dreaded. One wonders if there was an instance in the whole course of the war of an S. O. S. message being sent back by the infantry for artillery support against rifle fire. Always and everywhere it was the same story, those infernal machine guns were what held up the attack. Guns were a nuisance, but nothing to compare with the machine gun. The logical conclusion to be drawn from this state of affairs was that our infantry should themselves develop the weapon which in the hands of the enemy was such a terror to them. The result was the evolution of a light automatic which infantry took with them in the attack, and in the later stages of the war this weapon went far to neutralise the machine guns of the defence.

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For a long time there was considerable discussion as to the most suitable organization for these light automatics. There were

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two schools of thought, those who held that the Lewis gun was essentially a platoon weapon, and those who maintained that it should be used as a reserve of fire in the hand of the company commander. Gradually it came to be more and more clearly realised that the platoon is the infantry tactical unit, and that therefore the platoon should contain the means of producing fire as well as of movement, and, as the automatic had established its claim to recognition as the essential fire weapon of infantry, it followed logically and naturally that every platoon should contain at least one automatic weapon. During the last year of the war, and during the Arab rebellion and other disturbances which followed, so far as the experience of the writer goes, there were very few who questioned or cavilled at the organization which had been thus evolved.

And yet we find experienced frontier soldiers to-day who not only assert that the Lewis gun should be a company, and not a platoon weapon, but even, in extreme cases, go so far as to assert that on the frontier it is useless, and we should be better without it. These are men whose opinion cannot be lightly ignored or discarded, for they have tried it in practice and think that they have found it wanting. It certainly seems worth while therefore to probe the matter and see if we can discover the reasons which lie at the back of their contention, and whether or not that contention can be justified.

To take first the case of the extremist who holds that the Lewis gun is useless on the frontier, I have heard the following arguments adduced in support of this view;

(*a*) The enemy shows his contempt for the weapon by the fact that he does not make use of those he captures, and frequently hands them back to us.

(*b*) The characteristics of the gun, its narrow cone and short range, limit its use to certain fairly clearly defined roles, *e.g.*, denying a piece of ground to the enemy, covering

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fire to subdue the enemy's fire and so permit the riflemen to advance to the assault, etc., and that these opportunities do not occur on the frontier.

(*c*) Snapshooting is the great essential of infantry fire against such an enemy as the Pathan and the Lewis gun is not a suitable weapon for this purpose.

(*d*) Its weight makes it an unsuitable weapon to carry up the steep hills which characterise the frontier.

As regards (*a*), it is beyond doubt that the Pathan does not use the Lewis gun, although a certain number have from time to time fallen into his hands. It must however be remembered that one of his greatest difficulties is to obtain ammunition, and his experience and upbringing have taught him to husband every round, and to ensure that every shot is aimed. This being so, it is surely natural that he should decline to use a weapon which is by nature lavish of ammunition, and which relies for effect more on volume than extreme accuracy of fire. I have heard it suggested that his willingness to surrender captured Lewis guns is deliberate, with the object of giving us the false impression that he despises the weapon. Whether or not this can be substantiated I do not know, but even if it is a fact that the Pathan has not learned to share the dread of the automatic common to the infantry on both sides in all other theatres, I think all will agree that up-to-date the training of our Lewis gun sections has not reached a very high standard. This was especially marked, so I am told, in the opening phase of the Waziristan campaign of 1919, and seems in itself sufficient to account for any indifference to the weapon on the part of the foe.

To proceed to (*b*), it is true that the characteristics of the gun narrow its use to certain occasions, and to certain kinds of fire, but surely it is quite incorrect to state that opportunities for such fire do not occur on the frontier. One of the commonest everyday uses for infantry fire is to cover a piquet into position by plastering the piquet position, and other points in the vicinity,

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with fire, so as to keep down the heads of any enemy who may be there, and another is to protect the withdrawal of a piquet by denying the evacuated piquet position to the enemy. Both these roles can be performed by the Lewis gun in skilled hands with marked success. Again in the defence of a perimeter camp of irregular trace, and with broken ground in the vicinity, the Lewis gun is an almost ideal weapon for filling in the gaps between the Vickers guns and aiding the latter in ensuring that every inch of ground in the neighbourhood is swept with fire. I will deal with the attack latter on, but even if it could be shown that the Lewis gun were of little use in the attack, the above mentioned opportunities for its effective use seem quite sufficient to justify its inclusion in our armament.

Turning now to (*c*), it is perfectly true that on the frontier the safety of a detachment often depends on the skill of individual men in snapshooting, and it is beyond question that the Lewis gun is not a snapshooting weapon, but the inclusion of a Lewis gun in a platoon only reduces the number of rifles by two. There are still 3 rifle sections, and in the Lewis gun section itself 5 or 6 men armed with the rifle, all of whom are available for snapshooting if an opportunity presents itself.

(*d*) The weight of the Lewis gun does undoubtedly make it considerably less mobile than the infantry soldier carrying a rifle, and it is perfectly true that it is often very difficult to get it to the top of a hill which has to be scaled by infantry, and frequently impossible for it to keep up with the rest of the platoon in difficult ground. At the same time it is recognised in all the official reports and pamphlets on the subject which I have come across that the best place for the Lewis gun is very often not on the top of the hill, but in a supporting position on some underfeature lower down, whence it can bring covering fire to bear to protect the advance or withdrawal of the rifle sections.

To conclude my reply to the arguments of the few extremists who would abolish the Lewis gun altogether on the frontier, I

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maintain that there are abundant opportunities for its effective use, and that once we reach a really satisfactory state of training, the gun will prove to be one of our greatest assets. I cannot help feeling that the lack of appreciation of the weapon is probably due to the fact that the enemy possesses no similar weapon. I feel pretty sure that if the Pathan was in a position to subject our troops to really effective automatic fire, the troops themselves would realise its paralysing effect, and the demand would be, not for its abolition from our armament, but for its further development. The fact that the enemy has none is surely in itself an additional reason why we should take every step to ensure that we get full benefit from the superiority which is thereby conferred on us, for we must never forget that a civilised power owes its ascendency over barbarians mainly to the superior weapons and other devices which science places within its grasp.

I will next deal with the question of organization, whether the Lewis gun should or should not be a platoon weapon. I have tried to show that it owes its inclusion in the platoon to the recognition of the platoon as the tactical unit of infantry, and of the principle that the tactical unit should contain within itself the power of producing effective fire to cover the movement of its rifle sections. Does this principle hold good on the frontier, or do we require to modify our methods? That is the question. The advocates of the Lewis gun as a company weapon argue somewhat as follows:—

(*a*) We want every bayonet we can get to rush a piquet position or other objective on the hilltop.

(*b*) A Lewis gun section tied to a particular platoon may often be wasted day after day, owing to no suitable target presenting itself. The company commander is in a better position to judge when and where the guns are likely to be required, and can distribute them accordingly. In certain parts of the frontier, *e.g.*, the dense

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scrub found in the upper parts of Waziristan, the Lewis gun with the platoon seldom gets a chance. It would be more useful and far less vulnerable further back under the control of the company commander.

(*c*) The riflemen are inclined to lean too much on the Platoon Lewis gun, to the neglect of constant readiness to use their rifles.

As regards (*a*), the need for bayonet strength is fully recognised, and one would be sorry to see the home organization of 2 Lewis guns per platoon adopted in India, but the possession of 3 rifle sections does enable the platoon commander to organize the assault in depth, and gives him the power of carrying out an outflanking manœuvre on a small scale. The addition of an automatic fire weapon is held to be more than sufficient to compensate for the loss of 25% of the bayonet strength of the platoon.

(*b*) It is generally admitted that the Lewis gun is essentially a weapon of opportunity. On the frontier targets are seldom too easy and such opportunities as do present themselves are generally of a fleeting nature. In these circumstances it would surely seem that the best way to ensure as far as possible that there shall always be an automatic at hand to take advantage of such as do occur is, not to concentrate them in the hands of the company commander, but to have one with each platoon. It must be borne in mind that the Lewis gun has a considerably shorter effective range than the Vickers, and is of little use over 700 yards. This being so, it is probable that the opportunity will take place too far from the company reserve for the Lewis gun to reach it. I know few company commanders who are bold enough to claim that they have an unerring instinct which can be relied on to tell them when and where the golden opportunity will present itself.

(*c*) The fact that men are inclined to lean too much on the fire power of the Lewis gun should surely go a long way towards

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convincing the extremist that that weapon has certain latent powers which may be worth exploiting. If the confidence of the men in their new friend is apt to be overdone, and to result in the neglect of other necessary precautions, the only remedy seems to lie in better training, both of the men themselves, and of the section and platoon commanders, whose business it should be to see that the men understand the proper use of all the weapons in the platoon, and their interdependence.

Taking all the arguments into consideration, I cannot see that in the special case of frontier warfare there is any justification for a departure from the principle of the Lewis gun as a platoon weapon which has been accepted for the Imperial army. In fact it seems to me that it would be difficult to improve on the present organization of the infantry of the army in India for fighting on the frontier, whether it be against the well armed and well trained Mahsud, or the slighter opposition, longer marches and lighter piquetting to which we were accustomed before the war. In all, or practically all, circumstances the platoon is, and must remain, the tactical unit, and it seems vital that it should possess an automatic weapon as an integral part of itself, trained and led by the one commander. I think it must be admitted that there is considerable room for improvement, both in the gun itself, in the training of platoon commanders and in tactical methods. As regards the gun, the Ordnance authorities at home may safely be trusted to do all that can usefully be done in the way of experimenting with a view to evolving a lighter, less complicated and more reliable weapon. Some form of pedestal, light yet strong, is badly needed to render the gun capable of firing uphill to an angle of at least 45 degrees, and of traversing without, as at present, having to drag the whole bipod round. Some slightly modified anti aircraft mounting would probably be suitable. As regards tactical handling some guidance is required beyond the broad principles enunciated in our training manuals, and it seems important to elicit the views of experienced officers. The

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following suggestions are put forward in the hope that they may inspire others who have far greater experience than the writer to record their views for the common benefit.

I turn now to a consideration of the tactical handling of the Lewis gun, and I start from the following premises:—

(*a*) **The principles of warfare on the N.-W. Frontier are identical with those of any other form of warfare.** The nature of the country and the characteristics and armament of the enemy, by enhancing the importance of security, force us in certain respects to modify the methods of applying the principles, but the principles themselves remain unchanged.

(*b*) The Lewis gun is a platoon weapon, and is the principle fire arm of the platoon.

In all but very minor operations, fire is organized in 3 echelons: platoon weapons, machine guns and artillery. It must however be recognised that in any operation any platoon is liable to find it necessary to rely on its own fire power. The history of the Great War shows clearly how easy it is for the most carefully organized covering fire to fail owing to various quite unforeseeable causes. It is therefore necessary to consider the handling of the Lewis gun under two main headings, firstly, when covering fire from machine guns and artillery is available and the Lewis gun is not immediately responsible for providing covering fire for the rifle sections, and secondly, when no other echelons of fire are at hand to cover the platoon, and the whole work has to be done by the Lewis gun from the start.

I also assume that frontier operations of the future will not always partake of the elaborate and laborious nature which has been forced upon us, partly by the unprecedented armament and tactics of the Mahsud, and partly, if reports are to be relied on, by the indifferent training of our own troops at the outset of the Waziristan campaign. If we accept it as an established principle,

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that we can never advance without first covering every half mile of the route with a permanent concrete piquet, it means that operations which formerly took weeks to complete will in future take months and even years, and we shall practically have to confine our lines of advance to the bed of perennial streams. Such a route as that followed by Lockhart in 1897 from Shinawri, *vid* Chagru, Sampagha and Arhanga to Tirah would be well nigh impossible owing to the distance apart of water. I feel convinced that we shall have to revert to the pre-war method of piquetting by platoons and even sections. No doubt we shall run some risk and occasionally lose a piquet, but security is not the be-all and end-all of war, neither can omelettes be made without breaking eggs. This being so, it seems to me that the commonest form of operation which a platoon is likely to be called upon to carry out in future frontier operations will be the occupation of a piquet position, to be held during the day while the column passes, and then evacuated. Even if I am wrong in my assumption, any platoon which is thoroughly trained to carry out this operation will be able to adapt itself readily to other forms of operation. I propose therefore to begin by discussing the tactical handling of the Lewis gun in such circumstances.

In essentials the problem with which a platoon commander is faced when ordered to occupy a piquet position is precisely similar to that of attacking a strong point. Most infantry officers are familiar with the diagrams in "Platoon Training" illustrating the latter operation. The platoon commander knows the point he has got to take, usually the top of a hill, which may be anything up to 1,000 yards or so from the road and a climb of 1,000 feet. If the distance and height are greater, more than a platoon will probably be required for the job. There are bound to be several spurs running down from the hill, and the first point for the platoon commander to decide is which of these is the most favourable line of advance for his rifle sections. There will also inevitably be underfeatures at varying heights and distances from

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the objective. His second point will be to select one, or possibly two, of these from which the Lewis gun can best bring effective fire to bear on the piquet position itself and any neighbouring points from which the enemy are likely to oppose the advance of the rifle sections. It is of course an advantage if the position selected for the Lewis gun is to a flank, as the fire will be more oblique, and also can be longer sustained. On the other hand, considerations of security to the L. G. section cannot be ignored, and the frontier hills often provide excellent facilities for overhead covering fire. Sometimes owing to the range it will be necessary to advance by bounds, the Lewis gun covering the rifle sections up to the first objective, and itself advancing when they reach it to a final covering position whence it can help them into the piquet position, but such movement should only be made in case of real necessity, and it should be regarded as a principle that once a Lewis gun has opened fire, it should not move unless some marked tactical advantage is to be gained thereby, and such an advance should not as a rule be less than about 300 yards. In the event of opposition, it may often be necessary for the rifle sections, or some of them, to begin by helping the Lewis gun into position. The platoon commander should as a rule accompany the rifle sections, so the Lewis gun section commander must be made acquainted with the plan of action and then left to carry out his part alone. This demands a high degree of training, but no alternative seems possible.

Let us now leave the rifle sections to the platoon commander and accompany the Lewis gun section from the moment the platoon is ordered on piquet. The first thing is to get the gun off the mule, for it will almost certainly be impossible for the latter to go far from the road. Having learnt from the platoon commander the line of advance of the rifle sections and the part which he is expected to play, his next job is to get his section into the covering position. The following method of advance to the fire position is suggested. The section commander himself goes ahead

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accompanied by 2 scouts, so as to ensure reconnaissance of ground and also of the enemy. If the section commander accompanies the gun into action, time is often wasted owing to the discovery that the best fire position has not been selected, and it has to be changed. To select a fire position in the hills without actually testing it is no easy matter, and it is quite on the cards that the objective may prove to be invisible from the position first selected. By preceding the section the commander helps to obviate this. The remainder need not wait, there is quite sufficient difference in respective mobility to enable the section commander to get well ahead.

Having got into position, the great essential is constant vigilance and readiness for instant action. The primary task of the section is to help the rifle sections by covering fire, so a constant watch must be kept on their progress, and on any point from which the enemy may possibly oppose the advance. Here we have an illustration of the fact that the principles of warfare on the frontier are identical with those of any other form of war. The whole object of fire in the attack is to enable the infantry to advance to the assault. The protection of the L. G. section itself must not be neglected, as if it is surprised and overwhelmed it fails to carry out its role of co-operation. Ranges should be ascertained by fire, and unless it is pretty certain that the position is not occupied, fire should be opened on it as a precautionary measure, and maintained spasmodically, an eye being kept on the question of ammunition supply. In case of opposition everything must of course give way to the necessity of helping the rifle sections into the objective. As the rifle sections near the objective, and the assault is seen to be imminent, fire support must be intensified, and maintained until the rifle sections are as near as possible to the objective. This again demands a high standard of training, but we cannot afford to rest content with anything short of this high standard. In favourable circumstances a well trained team should be able to fire with safety until

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the riflemen are within a few yards of the objective. The Lewis gun should then be ready to switch on to any other target which may present itself.

The piquet having been established, the next thing to be considered is the role of the Lewis gun while it remains in position. Its most important task is without doubt that of helping the piquet with covering fire when the time comes to withdraw. In the meanwhile it is required to keep a look out for opportunities in which its assistance may be required, but it will seldom be necessary or advisable to take the Lewis gun into the actual piquet position. To do so is very apt to hamper the mobility of the piquet in the withdrawal, when speed is essential. Again, by keeping the Lewis gun in support, the platoon commander observes the golden rule of deployment in depth. It follows that the platoon commander should now look for a place from which the Lewis gun will be able to support the withdrawal, and at the same time cover the piquet position during the day. More often than not the piquet will retire by a different route to that by which it went up, so that it will usually be necessary to move the Lewis gun to a new position as soon as the line of withdrawal has been reconnoitred. The L. G. section commander must now see that his mule is in a position fairly handy for this new position, and also that it is in some way protected. An unprotected mule with several hundred rounds of ammunition on its back, and one sepoy *with a rifle* holding it, is a bait no Pathan could resist. This question of mule tactics is one on which it is almost impossible to lay down anything at all definite, but it is one which every company commander should constantly watch during training, and also when seeing to the correctness of his piquetting arrangements.

Next we come to the withdrawal, when rapidity is of such vital importance. A Lewis gun carried by hand on a rocky hillside is very consiberably less mobile than a rifle in similar circumstances, so arrangements must always be made to give the gun a

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certain start. This is automatically arranged in the first instance by having the gun in a supporting position. The withdrawal of the rifle sections from the piquet position is not of course carried out as one movement, and the gun must cover it until the last man leaves, and must be prepared to deny the piquet position to the enemy until the last to leave have got clear. By this time one or more rifle sections should be in position and ready to take over the role of covering the remainder. The Lewis gun should now withdraw as quickly as it can to a further covering position, where the same process will be repeated, and so on to the road, where it will be put on the mule.

It should be noted that throughout such an operation as has just been described, there will almost invariably be other echelons of fire available to supplement that of the Lewis gun should the latter prove inadequate for its task. When the piquet goes up, the advanced guard is in an ideal position to bring oblique covering fire to bear with its machine guns on the objective. The main body is also at hand with guns and machine guns. But in the face of the moderate degree of resistance which I hope may be expected as the normal, a platoon thus handled should be perfectly well able to look after itself. In the withdrawal the guns and machine guns of the rearguard will co-operate.

Next let us consider the problem of Lewis gun tactics in a case when two or more platoons are co-operating in an attack on a hill. The first point to bear in mind is that the spurs only will be used as lines of advance, the re-entrants being avoided as deathtraps. A spur is seldom wide enough to hold more than one or at most two platoons. If any particular platoon is held up, its correct action is to fire, not straight to its front, but obliquely on to a neighbouring spur so as to help forward the platoon which is operating on that spur. This is the principle of co-operation common to all warfare and the frontier terrain facilitates such action. For this purpose it seems best that a platoon, whether acting as a forward body or in support, should always be deployed

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in two lines, with the Lewis gun on the outer flank of the second line. As long as the covering fire of the other echelons is sufficient to help on the advance, Lewis guns should not halt to open fire, but should advance, keeping pace, if possible, with the rifle sections. Once the fire fight begins, it becomes a matter, and not an easy one, for the platoon commander to decide when the gun should advance, and when it is better employed firing across to help a neighbouring platoon. Once the L. G section has been left behind by its platoon, the decision rests with the section commander, when again a high standard of training and initiative is required. When the assault takes place it is an advantage to have the Lewis guns of the forward platoons well up, to pursue with fire if opportunity offers, and to repel counter-attacks. For this reason the Lewis guns of the supporting platoons should be employed in the fire fight in preference to those of the leading platoons; in this matter the company commander should exercise control. At the same time the commander of a forward platoon must be given discretion to use his gun if in his opinion circumstances render it necessary. As regards mule tactics, a useful working rule is to get the gun off the mule as soon as the rifle sections shake out into arrow or other loose formations. The mule leader must be trained to keep as near to his platoon as the ground permits remembering that to get a mule hit probably means the loss of valuable ammunition and gear, and hampers the mobility of the platoon. It is very important for a company commander to keep an eye on the mules of all 4 platoons, as it is almost impossible for the commander of a forward platoon to keep looking back to see if his mule is following. As regards formation, arrow is probably most generally suitable, the section commander and 2 scouts leading, scouting the ground, watching the front, and ready to select a fire position, the gun and Nos. 1 and 2 echeloned on the outer flank, 2 ammunition carriers echeloned on the inner flank, keeping in touch with the mule driver. Intervals and distances anything from 10 paces upwards.

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In a rearguard action the role of Lewis guns is the close support of the rifle sections of the rear party. They should also be prepared to assist the piquets in the difficult job of withdrawing. For both these purposes Lewis guns are best placed on the outer flank of the second line of the platoon. From this two points follow, first that, as a rearguard has 2 outer flanks the rear party should consist of at least two platoons, and secondly, that every platoon should be deployed in two lines. Frequent short withdrawals lead to waste of power and delay, and fire positions should be carefully selected so as to ensure the gun remaining in action as long as possible. Mules are out of place with the rear party, so the gun must be man-handled back, the mules of the rear party getting back to the supporting line and there awaiting their platoons. Again company control over all mules must be exercised.

Defence in frontier warfare will generally take the form either of the defence of a permanent piquet or of a perimeter camp. In the case of a piquet there is not much to be said on the use of Lewis guns, except that alternative positions should be selected and prepared. The defence of a perimeter camp, as in the case of most defensive positions in any warfare, should be built up on a framework of Vickers guns. These will be placed so as to command as far as possible all ground in the vicinity of the camp with locked bands of fire. It will frequently happen that it is impossible to cover all ground with the available Vickers guns, and the role of the Lewis is to fill in the gaps by means of fire directed along nalas and other features which are dead to the Vickers guns. The distribution of Lewis guns by platoons along the perimeter ensures that one at least shall always be available near any required spot. The exact location of all guns and the allotment of lines of fire requires careful co-ordination by the C. O. and M.G. officer with company commanders.

Reference has been made to mule tactics in various circumstances, but it seems necessary to add a few words on this important

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subject and to lay stress on the necessity of paying constant attention to it in training. At tactical exercises one constantly sees Lewis guns being carried by hand for long distances before the fire fight commences, and over ground which affords quite sufficient cover for the team and the mule. The mule is provided in order to increase the mobility of the section, and to avoid unnecessary fatigue to the men, and it should be an axiom that the gun must be kept on its back as long as possible consistent with reasonable safety to the mule. A single mule is not a very big target, and the folds of the ground usually give sufficient cover until the section comes under effective rifle fire. It is very important that platoon and section commanders should cultivate an "eye for country" and should constantly practise advancing along a covered way, the mule being led along some slight depression within the limits of the platoon frontage. Frequent tactical exercises based on infantry training, Vol. II, Section 9 and Vol. I, Section 136 should be carried out by company and platoon commanders, first without and then with the men *and the mule.* Battle drill (I.T., Vol. I, Ch. VIII) is as important for the mule as for the men, and it must be trained to move at a trot while the men double across a bit of exposed ground. As a rule the time to take the gun off the mule is when the rifle sections are forced to deploy (I.T., Vol. II, 6 (5)), as the mule will probably be knocked out by effective rifle fire, but until that time the gun should be kept on the mule, to save the men from unnecessary fatigue and to enable the section to keep up with the platoon. The mule driver too must be carefully trained to make use of all possible cover, to keep as close to the section as circumstances and the ground permit, and never to lose sight of the section. Whenever it is possible to put the gun on the mule, even for a short distance, this should be done. It will always be necessary in action for the company commander to keep an eye on the handling of the mules of all 4 platoons, as platoon commanders cannot keep looking to the rear as well as to front and flanks.

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The above is an attempt to show how the principles of our training manuals should be applied to the handling of Lewis guns in frontier fighting. The writer hopes that this outline may be of some assistance to those who have to train and lead our troops, and also that others who have greater experience of the practical difficulties of this form of warfare may be induced to put forward constructive criticism.

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AN INDIAN DREAM.

By an Ex-Piffer.

I had had a very trying morning on the range, had been very hot, and the "likhne walas" more than usually wearying. The range at Kohat is not a pleasant place after eight o'clock, even in April, and is worse in the evening when the dust storms arrive. Office over, I lunched well, but not very wisely perhaps, for I imbibed some beer, and was told, as usual, that I should be dead in a year etc., etc., *ad infinitum*. Afterwards I wandered to my bungalow, sat at my ease in the verandah to continue my perusal of "The Reformation of War," which, as a painstaking if somewhat stupid "young officer," I considered it my duty to read. I read many strange things and skipped many high-faluting words; then I came to Chapter X. As I read through this I forgot the book and dropped it and gazed towards the tangle of hills, that ever mysterious frontier which generations of "Piffers" had kept watch and ward over. Looking towards the Pass I saw not the cavalry lines but an aerodrome! Of course, I remember now, there are neither cavalry nor infantry and the famous Kohat Mountain Battery is dead as my old Regiment who won their spurs at Delhi and Lucknow in the black days what time the "Lances of the North" saved India. Did I not say good-bye to the old Subedar-Major Amar Singh, who, when I asked him what he was going to do, replied, "I go to my village to die, Huzoor". My Afridi Jemadar, Zaman Shah, went off quite cheerfully with his gratuity, probably calculating the number of rifles it would buy. His parting shot was to the effect that India was a rich land to loot. I remember telling him that he would soon have the "hawai walas" dropping bombs on his village which would send them all to sleep, and that "tank paltuns" would chase his clan if they showed their faces on the

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plains and that it would cause much fear among the jowans. He replied that the jungli ones might be *afraid once*, but did I know what would happen when the Afridis awoke from these sleeps. I did know, I also knew what the original bombing of villages had done, alienating the innocent as well as the guilty. I wonder what Edwardes or "Nikelsayn" would have thought of it all. Now we have only a few Frontier Constabulary to hold the border and nothing to back them up with except tanks and aeroplanes. They say we shall never use lethal gas; we shall have to if we rely solely on this mechanical army. What is the use of making Afridis laugh, dance or sneeze or whatever these mixtures do? Unless we can collect enough aeroplanes to send the whole frontier to sleep at the same time, what is to prevent those that are awake from having a knock at some frontier village or station? They have learnt how to avoid raids with explosive bombs and the tank in their own hills leaves them cold, nothing but death or the immediate prospect of it will keep them from their traditional habits of raiding and kindred amusements.

I was pondering on my fate and thanking my lucky stars that I had not been posted to one of the Frontier Constabularies when I was disturbed by the buzz of a squadron of bombers leaving the aerodrome and making off in the direction of Bannu. Later, entered one Jephson from Hangu, of whom I enquired as to the situation and the reason for the aerial activity I had just witnessed, as you must know, in the interests of economy, our aeroplanes do not go up for fun. He, being of a cheerful disposition, was pleased to inform me that the situation had gone from bad to worse and that the frontier was likely to blaze up at any moment, and had I heard of the show at Bannu? On learning that I had not, he proceeded to inform me that a company of tanks had been sent up the Ghurum Valley to collect a fine from the Ali Khel. They had failed to collect the money and coming back had found the Kursu Tangi blocked with boulders. The Bannu squadron are trying to send the Ali Khel to sleep and

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the Kohat crowds are off to assist. It seems that half the tank crews in trying to clear away the boulders have been hit or have gone to sleep probably through their respirators slipping as they struggled with the boulders. He wound up by saying, "I bet they would give a few pice for some of the old P. B. I., I suppose all they can do now is to try and machine gun the sleepers from the air. The tribes are really nasty and seem to be pulling together presumably under a leader with brains. It will be worse than '97." Jephson having imparted his news and opinions departed in search of the D. C., leaving me to proceed to my office near the Treasury, where I found the air thick with rumours and wild stories.

My police had been re-armed with the S. M. L. E. rifles of the disbanded infantry and although no ammuntion was allowed for practice with this obsolete weapon, the men had received instruction in their use, and fortunately a large proportion of them were ex-soldiers. I set about arranging for extra patrols for the cantonment at night, sifted such information as had been obtained and reported it to the Mechanical Brigade Major. I then repaired to the D. C.'s office where I gathered that the whole frontier was in a blaze although some of the Afridi clans were at the moment holding aloof. The covering brigades were to mobilise and martial law was to be proclaimed throughout the Province. Things were looking very ugly on the Samana, there had been large gatherings in the Khanki Valley and the constabulary at Fort Lockhart had reported that the road down to Patarband had been blocked and was held by tribesmen. Whilst I was there the D. C. heard that a squadron from Peshawar, new to the country, had bombed the "Shabash" Khel in mistake for the "Shaitan" Khel. That will bring them all in I suppose and they will close the Pass. The D. C. was asking for the Punjab Mounted Police Regiment which was reported to be concentrating at Rawalpindi. It is a blessing we have wireless as all the lines are down already.

I spent a rotten night between my office and the cantonment. Morning brought a fresh crop of news. The aerodrome at Bannu

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had been rushed at dawn, and before the police or the depleted tank battalion could render assistance the sheds and store godowns were a vast furnace. Then the mail train from Rawalpindi did not arrive, and we heard that the Shaitan Khel had derailed it ten miles from Kohat and that large parties of tribesmen were trying to destroy the bridge over the Indus at Khushalgarh. Unless we can keep the line open we shall soon be without our laughing, sleeping and weeping bombs, and I shall not get any more ammunition for my rifles; I have only twenty rounds per rifle. The city is full of strangers and the tales and rumours are even more wonderful than they were yesterday.

I am summoned to a conference, there seems to be a strong desire for guards, I had noticed this before at Bumblepore in 1919. I pointed out that I had my normal duties to find, and that in addition I was finding extra patrols in the city and cantonment. I was told that these patrols would be taken over by tanks, whereupon I submitted that no tank patrols would prevent people from moving and hiding in the gardens and crops round cantonments, and suggested that everyone should move into the old fort at once. The Air Commander wanted police guards on the aerodrome, he said his men could not work all day on machines and do guards all night, also he complained of sniping at night from the old graveyard near the Peshawar road. I had to point out that I simply could not produce any more men. It seems that the man with the rifle and bayonet has become in sudden demand.

A message now comes in from Jephson at Hangu saying that a runner has got through from Fort Lockhart with the news that they are actually beseiged and have already beaten off one assault. They are short of ammunition and food, and Gulistan has fallen. I presume the aircraft people will do what they can by bombing and machine gun fire, but in that broken country it wont be very effective and putting the tribesmen to sleep will not relieve the place; tanks cannot get up the road from Patarband especially as it is blocked with rocks and boulders. However, I

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suppose our Mechanical Army can solve the problem: I cannot. I wonder what has happened to the tanks in the Kursu Tangi!

We move the Treasury and the civil records into the fort and endeavour to collect rations, etc., in case of the worst happening. All isolated bungalows are vacated and families concentrated at the Mess and Club, fortunately a good many went away before the railway stopped working.

The night is made hideous by the roar of tanks patrolling the cantonment roads. One or two outlying bungalows are fired towards morning, and my patrols encounter armed tribesmen on the outskirts. Soon after midnight a "Pass made" bomb is thrown into the Police Post near the D. C.'s bungalow, and heavy firing takes place in the neighbourhood of the Constabulary Post on the Peshawar road.

It is now decided to get everyone into the fort. Dawn finds me at the Club superintending this. There are a number of wounded policemen to be moved as well as the hospital patients, and we are being fired on from various compounds. Just as it is getting light there is a dull roar from the aerodrome punctuated with machine gun and rifle fire, a few aeroplanes rise and circle round and then there are the dull detonations of gas bombs. The worst has happened, a dummy attack on the aerodrome and tank parks, the real one will come through these compounds and crops, just where the tanks and aeroplanes are most ineffective. Here they come, dodging from wall to wall from every direction, it is only a matter of minutes before we are swamped. There is a rush from behind the Club, and a crowd of yelling ruffians pours out. I shoot at the foremost and miss, he makes straight for me, catches my arm and brandishing a knife mutters. I close my eyes tight, again he mutters, and what he says is "Chah taiyar hai, Huzoor." I open my eyes. Thank goodness it is only my old bearer with the tea. What a beastly dream! I feel quite cheered, however, as I remember that I am still a P. B. I. and not a D. S. P. of a dream and that to-morrow we start classification.

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OPERATIONS IN BRITISH SOMALILAND, 1920.

By Group Captain J. A. Chamier, C.M.G., D.S.O., O.B.E., R.A.F.

In the April number of the *U. S. I. of India Journal* appeared a reprint of a lecture delivered at the Staff College, Quetta, in 1920, under the heading given above.

The object of the lecturer was to prove that the independent air operations "were a great mistake and seriously prejudiced the success of the operations as a whole".

Now, everyone is entitled to his own opinion on any operation but such opinions should be advanced in a reasonable spirit, and with a full knowledge of all relevant facts: the statements in the first paragraph of this lecture that the campaign was "initiated more or less as a test case" and that the Air Ministry "went so far as to declare that savage warfare was at an end," if they do not indicate a wrong spirit, must be evidence of an ignorance of "the other fellow's point of view".

Far be it from me to enter into a controversy on this campaign (it would be a pity to dispute over so good an example of operations by two services combined to a common end): my object is to pour oil on waters which have been unexpectedly troubled, apparently by the breath of a chance remark. "A brother offended is harder to be won than a strong city" but I hope that as Major Howard is obviously more at home when the scene is laid in Somaliland than in Whitehall, an inside view of the preliminary discussion in London may help to an understanding of the Air Ministry action.

In 1919 the Governor of Somaliland came Home and urged on the Colonial Office that he was unable to afford to friendly tribes the protection against the Mullah to which they were entitled. He stated that during the war he could pacify them with the

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statement that Great Britain was involved in far weightier matters but that such excuses could no longer hold good. The War Office was therefore approached. The considered opinion of the General Staff was that anything less than a large force was by past experience useless for the work—not on account of the Mullah's fighting power, on the declination of which so much stress is laid by Major Howard, but on account of the well known and fully recognised difficulty of bringing him to book. But the men were not available and the General Staff could not promise them for two years. The prospect of so long a delay appalled the Governor and in his despair he turned to the Royal Air Force and asked whether they could help. Picture to yourselves now therefore the problem as it presented itself to the Air Ministry at this stage. The forces of the Protectorate were small—in the opinion of the General Staff far too small to have any hope of bringing the Mullah to battle. Air reconnaissance was unpromising as an assistance to this object in a country affording much cover, few landmarks, and where more or less friendly tribes were liable to be mixed up at close quarters with the Mullah's following. Could the Air Force help the troops by offensive action? This was more promising but less necessary. With troops the difficulty was to bring the enemy to battle and whereas the R. A. F. could help if an actual fight was brought off, they were far more likely to scare the enemy away and thus increase the difficulties of the troops. In short, aircraft might be a positive hindrance in a combined operation—they could certainly not guarantee to be of any great assistance until they had been in the country for a considerable time and learnt the lie of the land and the character of the enemy, and time was the one thing which could not be given: only a small air detachment could be spared by the C-in-C Egypt and that only for a short period.

One alternative remained, to try the moral effect of air action as a separate operation. This course was urged by the Governor. He pointed out that the Mullah was more or less of a fixture at Tale, that he had built forts, had started cultivation and thus

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offered a good moral target and a not inconsiderable material one. If he were driven from his stronghold by a weapon whose terrors would be sure to be exaggerated, the blow to his prestige would be great. The Air Ministry, while evincing some scepticism as to the settled habits of the Mullah, agreed to try, and the plan was made for his attack. It should be noted that at Tale the Mullah was more or less inaccessible to the troops so that there could be no question of a clash of interests and no one's feelings could be hurt. It is only fair to add that the General Staff at the War Office were very much averse to this independent air attack: they held that it would make the Mullah abandon his fixed abode for a nomad life and render him correspondingly hard to round up when ground operations should eventually become possible. The political urgency of taking some definite action over-rode, however, these objections; moreover the "fixity" of his abode was very doubtful.

Preparations were well under way when news came that the Mullah had moved from his "permanent" location at Tale to Medishe. Was the plan to be altered? Although it was true that the new position was infinitely more convenient for the action of troops, the evidence as to the elusiveness of the Mullah was greatly strengthened. The Mullah was apparently the same old Adam, ready to move at a moment's notice, and not the sedentary sybarite that he was represented to have become. To assume that he would remain in pleasing inactivity for troops to cut off his retreat was to fly in the face of the whole history of Somaliland from 1901, and to impute to him a lack of sense which might be a highly convenient assumption for our plans but for which no possible justification appeared to exist. The original plan was therefore adhered to: no question indeed of its alteration was ever suggested by the Governor or Protectorate authorities prior to the arrival of the aircraft.

Thus matters stood until a council of war was held a few days previous to the attack: it was at this date that the Protectorate

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military authorities submitted their plan described by Major Howard. Briefly put, this was to place a force of cavalry and infantry, complete with a supply column of two months' supplies, right across the Mullah's most favourable line of retreat and within 70 miles of his haroun. This movement was to take place well before zero day. It is hardly conceivable that the Mullah could have been ignorant of a movement of this magnitude to a point over 50 miles in advance of our "pre-operation" outpost line: it is still less conceivable that he would have stayed peacefully in his encampment when the news reached him. To have permitted such a move would, by all the laws of probabilities, have resulted in the complete absence of the Mullah and his following before zero day could dawn. The "combined operation" would strike at nothing. The plan was agreed indeed by the R. A. F. Commander on the spot but he reported it immediately by wire, and accepted the Air Ministry's refusal to risk the whole possibilities of air attack to pursue what they could only consider as a chimera. "Surely in vain is the net spread in the sight of any bird."

This completes the tale of the preliminaries: the Air Ministry acted in the light of all available military and political experience of the last 19 years. It remains to be seen whether they had any cause to regret their action.

Major Howard sums up the results achieved by air action.

(1) Material effect negligible.

(2) Moral effect great.

(3) Touch with enemy lost.

He is correct in every detail. But is this a proof that air action had failed? A possible result of the advance of the ground troops might have been:—

(*a*	Material effect ...	...	... Nil.
(*b*)	Moral effect ...	...	... Nil.
(*c*)	Touch with enemy ...	...	... Lost.

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This is admittedly the worst that might have happened—in the actual result the immense moral effect may be set off against the small material damage. In connection with material effect the strategical and tactical summary in the Official History of the extensive operations of 1904 says, "the object was the destruction of the fighting forces.....owing to their great mobility it was found to be difficult even with mounted troops to inflict heavy losses on them in men." Remember this was written after a campaign which employed 6,000 regulars and 1,500 irregulars. Loss of touch has been the *invariable* result of every military action fought in the Protectorate since 1901: even after Jidbali touch was lost within 18 miles. Read also this account of the pursuit after the action of Ferdiddin, July 1901:—

> "Among the enemy the Mullah's own kinsmen, the backbone of his following had been severely handled.....the Mullah's following never stayed their flight into the waterless desert for 5 days and few reached the wells of Mudug and Bir Aun alive.....The Mullah himself, his son, and his chief advisor Haji Sudi were reduced to making use of the water found in the stomachs of dead camels." (Official History, p. 79.)

Could not this have been written after the magnificent pursuit of the Mullah by our mounted troops in 1920? Is it not clear that the same pursuit with the same results would have followed a "combined operation" if by an extraordinary freak of fortune the Mullah had been brought to battle? Where is the "great mistake" of air action?

Finally it is possible to point to Major Howard's own account of the operation up to the 30th January. The danger of air action was that it might have prevented the Mullah being surrounded but it is quite clearly proved that he was actually somewhere in the Jidale area right up to the 29th January. In other words the Camel Corps had reached their desired position of El.

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Afweina (the subject of the early controversy) a clear 8 days before the Mullah escaped. Neither air action nor troops could ever bring the Mullah to battle if he wished to avoid it: and the only danger inherent in the air operations was that they would scare him away before we could place forces to intercept him. *This did not in fact occur.*

I need not comment further on Major Howard's lecture nor combat his conclusions. However much we may sympathise with those who feel that they were deprived by a freak of fortune of the whole credit of the success which they believe would have crowned the work of years, we may surely accept the finding of both the Commander-in-Chief's and the Air Commander's despatches.

"The credit is primarily due to the Royal Air Force who were the main instrument of attack and the decisive factor. They exercised an immediate and tremendous moral effect over the Dervishes, who in the ordinary course are good fighting men, demoralising them in the first few days."

"An outstanding feature of these operations was the sustained and determined pursuit by the Camel Corps, often on half and no rations, over a great stretch of country regardless of privation and fatigue. The pursuit was pressed with success to the utmost possible limits." (Sir G. F. Archer's despatch.)

"Further bombing attacks were, however, rendered unnecessary, since Captain Gibb's friendlies intercepted Mullah's convoy and rushed and captured Tale, while the Camel Corps, in a magnificient pursuit, destroyed the Mullah's personal following, which had escaped from that fortress. With this striking success the campaign was ended....." (Group Captain Gordon's despatch.)

"My relations with the Somaliland Field Force were of the most cordial nature throughout, and I am deeply indebted to Colonel G. H. Summers for the assistance which, through his

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long experience of Somaliland and its peculiar conditions, he accorded me at all times. The constant understanding which prevailed between us was a most important factor in the attainment of smooth working throughout, and particularly in the combined operations which followed the air attack." *(Ibid.)*

While thus attributing to the R.A.F. action the credit of providing the foundation of success these reports bring into full relief the magnificent work of the troops which crowned the campaign and without which it was admittedly incomplete.

Is it not far better that the verdict should be praise of allied services for the manner in which their respective operations combined to bring about so satisfactory a result, rather than that either service should assert, that only by its own heroic exertions was success achieved?

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SOME NOTES ON STUDYING FOR THE STAFF COLLEGE ENTRANCE EXAMINATION IN INDIA.

(*By Captain R. G. Williams, 2/19th Hyderabad Regiment.*)

The results of the Staff College Entrance Examination for 1922 and 1923 have clearly shown that the standard of knowledge possessed by the average candidate for Quetta is inferior to that of the officer competing for Camberley. The reasons for this inferiority of knowledge are not difficult to seek. The Camberley candidates are chiefly British Service officers who study and take the examination in England. The candidates for Quetta are chiefly Indian Army officers who are compelled to study and sit for the examination in India, and in consequence labour under two disadvantages :—

1. The climate of India, in an ordinary plain station, is not conducive to serious mental concentration or study during five months of the year.
2. The examination takes place during the Collective Training Season, a period which, though climatically suitable for study is, nevertheless, a period during which, in most units, an officer is more or less fully occupied with his regimental duties with, in consequence, comparatively little time at his disposal for additional work.

As it is not possible to change the climate of India these two disadvantages are unavoidable. It seems, therefore, that the ordinary accepted methods of study for the examination must to a certain extent be modified for India.

An excellent article reprinted from the "Royal Engineer Journal" appeared in the January number of this *Journal*. This

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article recommends that an officer should, in addition to a certain amount of reading, study for five hours a day (including Sundays but excluding Saturdays on which four hours should be done) for one year. It is submitted that this amount of sustained study is impracticable in India. An officer of exceptional physical strength might accomplish it in addition to his ordinary work and keep fit, but for the average individual it would be difficult, if not impossible.

Exercise.—As everybody knows, regular hours and regular exercise are essential to real physical fitness in India. To do full justice to himself during the period of study and during the examination an officer must be fit.

Although this is an ordinary platitude its importance is not always fully realised. Many officers tend to neglect exercise for study and sit for the examination with a mind unalert and tired. It is admitted that the regimental officer gets a certain amount of exercise in his daily work, but this is not sufficient. If he is to derive full benefit from it, the exercise must be in the form of recreation when he forgets all else but the game he is playing. Two hours must be set apart daily for games or other exercise.

Hours of study.—The following hours of study are suggested as being reasonable for India and the average officer :—

Monday, Tuesday, Wednesday, Friday and Saturday	...	3 hours a day.
Thursday and Sunday ...	...	5 hours a day.
Total per week	...	25 hours.

To attempt to do more than this in the hot weather would be inadvisable. In the cold weather or training season an officer's ordinary regimental duties would probably not permit him to do more.

It is difficult to estimate what total period of study is necessary as it must vary according to the general capabilities

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of each officer. For the average individual, however, who already has a good knowledge of principles and of the various training manuals, and who, by intelligent reading, has kept himself in touch with events of the day, one year should be sufficient.

Method of study.—There is only one method of study and that is the careful preparation of, and strict adherence to, a complete time-table of work. Too much care cannot be devoted to the preparation of this time-table and too much stress cannot be laid on the importance of adhering to it when it is prepared.

It is futile to work without system, and the time-table must form the basis of any system of study, it being the only means by which one can be certain of covering the necessary ground. The time table must be progressive with each subject divided into its various headings or sections and approximately a month allowed before the examination for thorough recapitulation. In deciding the amount of time to be allotted to each subject the mark-earning value of the subject must obviously be taken into consideration. The following sub-division of the 25 hours per week is suggested :—

Training for war	10 hours.
Organisation and administration	5 hours.
Imperial organisation	5 hours.
Optional subjects	5 hours.

In preparing a time-table of work the fact that four or five months of the year will be spent in an ordinary plain station in the hot weather must be taken into consideration. Some men may be able to work as well in a temperature of 115 as in a temperature of 75, but the average man cannot. It seems, therefore, advisable to modify the nature of one's study during the hot weather period and fortunately the present syllabus of the examination adapts itself to this modification. Many books are officially recommended for study but it is neither possible nor advisable to attempt to read all or nearly all of them. A

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judicious selection must, however, be made and one should be guided chiefly by what is procurable from the Brigade Area or District Library or from the library of the United Service Institution of India. These books should be read and thoroughly digested during the hot weather. It is unnecessary and would be a waste of energy to make voluminous notes on every book, but some notes must be taken for future guidance and a perusal of the question papers of previous examinations will readily suggest what is likely to be of use.

The hot weather period can also be utilised for the study of campaigns. Although the syllabus of the examination does not require any definite campaign to be studied, a general knowledge of the more important campaigns is essential.

Speaking broadly, the hot weather period should be devoted chiefly to reading in preparation for the more practical work of the cold weather period.

Training for war.—Four papers are set in this subject. In the last three examinations one of the papers has been set apart for Mountain Warfare, so that it is reasonable to suppose that this will be the case in future.

The preliminary hot weather reading for this subject should comprise such works as Henderson's 'Science of War,' Altham's 'Principles of War,' Foch's 'Principles of War,' and books on the more important campaigns. Innumerable works on strategy and tactics are obtainable, but it is a mistake to read too many. A careful and systematic study of a few standard works should be sufficient. In studying campaigns particular attention must be given to the Great War. A perusal of old question papers will prove the need of this. There is no necessity to study a campaign or battle in minute detail: the time at one's disposal would be insufficient. It is, however, necessary to understand broadly the cause or causes of the success or failure of a campaign, to realise what principles of war were observed and what principles were

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violated as the case might be, so that examples of failure due to the violation of principles, and of success due to the observance of principles, can be freely quoted.

Tactical Schemes comprise the greater part of the Training for War papers and it is in the solution of these schemes that the chief difficulties of this subject lie. The time factor plays an extremely important part. It is not so much lack of actual knowledge that is likely to cause failure as the inability of a candidate to complete or nearly complete the papers in the time allowed. It is probable that most candidates would obtain satisfactory marks in Training for War were four or five hours allowed for each paper instead of three. The time factor must, therefore, be combatted and one must fashion one's study with this end chiefly in view. Assiduous practice in the solution of tactical schemes is absolutely essential. 'Letters on Applied Tactics' by Griepenkerl will be of great assistance in this connection. Although the latest edition of this book was published before the war and is consequently a little out of date, it contains 26 tactical schemes with solutions carefully worked out in great detail. If two schemes are taken from this book each week the candidate will find that at the end of three months his ability to solve tactical problems quickly and correctly will have increased enormously. F. S. R., Vol. II (War), must be used for reference purposes during this work in its early stages. The examination papers of previous years should next receive careful attention. Not only do they contain tactical schemes of every variety, but they also give a correct idea of the speed at which it is necessary to work during the actual examination. These papers should be worked out in one's own time at first, but finally and for at least a month before the actual examination all work must be done strictly in accordance with examination conditions. It is probable that most candidates realise the necessity of this, but it is doubtful whether many conscientiously carry it out to any extent. Its importance, however, cannot be sufficiently urged and those who do not practice

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it may be disagreeably surprised to find how the three hours allowed for each Training for War paper literally flies when they are seated in the examination room.

As regards Mountain Warfare, the "Synopsis of lectures delivered at the Mountain Warfare School, Abbottabad," will prove a very useful aid. It contains in great detail practically all the information that is required for this type of warfare. An official notice was recently issued to the effect that a new and revised edition of the work is about to be published.

With regard to the actual solving of tactical schemes on paper it seems to be the general opinion that if two officers work together they will both derive more benefit than if they each worked alone. Two heads are invariably better than one and especially is it the case when a tactical problem is to be worked out. This would, of course, apply only during the earlier stages of study and obviously not when work was being done under examination conditions.

The question is often asked: "Without enlisting the services of a crammer how is one to know that one is working on the right lines." It is a well-known fact that most tactical problems will lend themselves to more than one correct solution. If a crammer is employed, one is only obtaining a second opinion and paying heavily for it in hard cash. This opinion may be sound but there will invariably be others equally sound. So long as the solution of the scheme exhibits no flagrant violations of the principles laid down in F.S.R. II, or ignorance of the training manuals of the various arms, then it cannot be far wrong. It may be clumsily worked out, or the principles incorrectly applied, and in consequence not likely to gain high marks in an examination, but these defects can be overcome by constant practice. The assistance and criticism of one's own C.O. or other senior officer, or of a Staff College graduate in the station will nearly always be available and sufficient to put one on the right lines. F.S.R., Vol. II, states that the principles of war are neither numerous nor in themselves abstruse,

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but the application of them is difficult and will vary in accordance with the circumstances of each case. It is then by constant practice that the correct application of principles to tactical problems will be attained. There is no other method. The time allotted to Training for War study during the cold weather should, therefore, be almost exclusively applied to practice in the solution of tactical schemes.

Organisation and administration.—This is a subject for which few books can be definitely recommended for study, and it is consequently difficult to know best how to obtain the knowledge required by the examination syllabus. With the exception of F. S. R., Part I, there is no standard and up-to-date work on organisation. Colonel Hubert Foster's book on organisation, dated 1913, is useful as a means of comparing the pre-war system of administration within the army with that which obtains at the present day. Major-General Anderson's four lectures delivered at the Staff College, Camberley, are extremely useful and should be carefully studied. A thorough knowledge of F. S. R., Part I, is also obviously necessary. Limited information regarding the organisation of foreign armies can be obtained from the Statesman's Year Book but further channels must, if possible, be investigated in this connection.

Apart from questions on Military Law the greater part of the papers on Organisation and Administration refer to controversial matters for which it is impossible to cram. Close touch can, however, be maintained with most matters of interest affecting army organisation and administration by a regular perusal of the "Army Quarterly," the journal of the R. U. S. I. and this *Journal*. Notes should be taken on the more important articles and from these notes, and without further reference to the written articles, practice in essay writing should be obtained. Clear and concise expression is very necessary in answering questions and all officers do not possess this gift to an equal degree. Constant practice in

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essay writing on various subjects is obviously the only remedy for those deficient in this direction.

Officers of the Indian Army labour under a slight disadvantage with regard to Military Law. Their knowledge is generally almost exclusively confined to the Indian Army Act. A certain amount of time must, therefore, be definitely set apart for the study of the Manual of Military Law. An intimate knowledge of the geography of the Manual is essential to prevent much valuable time being wasted during the examination in looking up references. All do not realise the importance of this and when the time comes suffer in consequence. This is a type of study suitable for the hot weather, but one cannot afford to ignore it completely during the cold weather, and a certain amount of time each week should also definitely be set apart during this period. Many candidates have a tendency to be of the opinion that because the Manual of Military Law is allowed in the examination room for reference, it is unnecessary to devote any time to its study as a preparation for the examination. This idea is completely erroneous, and the report of the examiners for 1923 makes interesting reading on this point.

To be in a position adequately to study Organisation and Administration the subject must be divided into its numerous headings and then each heading taken in turn. The list of the sub-divisions given in the articles reprinted in the January number of this *Journal* seems satisfactorily to cover the necessary ground.

Imperial organisation.—This subject requires very wide reading. As a preliminary, however, a general knowledge of the physical and political geography of the British Empire is of the first importance. This can be obtained from an ordinary elementary school geography book and an atlas. A minute knowledge is not necessary. Subsequently a selection of books can be made from those officially recommended. Here again it is a mistake to read too many. To be able successfully to cope with this

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subject a sound knowledge and clear understanding of questions of the day is essential and this cannot be gleaned from books: they simply form the preparatory ground work and an aid to a quicker and easier understanding of matters of Imperial interest. The following works deserve special attention:—

Historical Geography of the British Empire, by Hereford George.

Government of the British Empire, by Jenks.

The British Empire (six lectures), by Sir Charles Lucas.

The Strategic Geography of the Great Powers, by Vaughan Cornish.

War and the Empire, by Col. Hubert Foster.

In addition to these and to keep oneself closely in touch with current events the following publications should also be studied:—

The Round Table.

Army Quarterly.

Journal of the R. U. S. I.

Journal of the U. S. I. of India.

The daily "Times."

These contain articles by prominent writers on matters of Imperial concern and should consequently be one's chief source of information and inspiration. One must, however, think as well as read. It will be futile automatically to read the reviews and blindly to adopt the opinions expressed in them as one's own. Stagnation of mind and consequent narrowness of outlook can be the only result. Most articles are merely an expression of the opinion of the author who has thought out the subject about which he is writing. His ideas may be sound but they need not necessarily be one's own ideas. The articles, will, however, be a great help in that they will aid one in thinking the matter out for oneself. One cannot possibly anticipate every subject which

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may be required to be discussed at the examination: quite probably a candidate will be asked to give his opinion on a matter about which he knows little and has thought less. If, however he has trained himself to think, and to express his thoughts in a clear and concise style, he will be very little at sea. If, on the other hand, his study of Imperial Organisation had consisted of automatic reading or, in other words, cramming, then immediately he encounters a question outside the scope of his own limited knowledge, he will flounder and his answer will probably be useless from the point of view of gaining high marks.

It will also be found useful to take cuttings on important subjects from The "Times" and paste them in a book for ready reference. Records of parliamentary debates on Imperial questions can be preserved in this manner. This, however, can be overdone and if the subject-matter is not judiciously chosen, a voluminous collection of newspaper cuttings will be the only result.

Notes on the Land Forces of British Dominions, Colonies and Protectorates (excluding India) was issued with Army Orders for May 1923 and can be obtained for one shilling.

The remarks of the examiners on Imperial Organisation for the 1923 examination deserve special attention.

Optional subjects.—The regulations for the Staff College Entrance Examination lay down that if three optional subjects are taken, one must be a language—French, German or Russian. The knowledge required for languages approximates to the Interpretership standard. The question arises as to whether it is essential, in order to stand a reasonable chance of gaining a competitive vacancy for Quetta, to take three optional subjects. The results of of previous examinations seem to suggest that it is not absolutely necessary, but that if moderately high marks are obtained in two optional subjects it is sufficient. Unless, therefore, one already possesses a sound knowledge of French, German or Russian, and needs very little time to bring that knowledge up to the necessary standard, it seems to be the better course to take

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two optional subjects only and to study these thoroughly. The following comparison of marks is interesting, and the effect of the deduction of 300 marks from those gained in each optiona. subject must not be forgotten when one is considering whether to take two optional subjects or three:—

Two optional subjects.		*Three optional subjects.*	
Marks obtained ...	1,500	Marks obtained...	1,800
Credit	900	Credit ...	900
Marks obtained ...	1,200	Marks obtained...	1,500
Credit	600	Credit ...	600

In other words 750 marks gained in each of two optional subjects is equivalent to 600 marks gained in each of three optional subjects; or 600 marks gained in each of two optional subjects is equivalent to 500 marks gained in each of three optional subjects.

A wide selection of optional subjects is given. Certain technical subjects, however, cannot be studied sufficiently in the time at one's disposal—five hours a week—unless one already possesses a sound groundwork of knowledge of them. These subjects are Elements of Engineering, Chemistry, Physics, Mathematics and Languages. The History of India and the History of Europe and the U. S. A. are popular, especially the History of India, but in spite of the fact that a generous choice of questions is given the marks in these subjects do not usually run high. Both offer a very wide field of study and it is probably because of this fact that marks generally are low. Five hours a week is inadequate in which to get a good grasp of them. The remaining optional subjects are Business Organisation. Movements by Road, Rail, Cross Country and Air, and Political Economy. Of these the last two require least reading and are consequently good subjects to select. Most officers already possess a general knowledge of both and for their further study few books are necessary. Moreover the number of different questions it is possible for an examiner to ask in these subjects seems to be limited more than in

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others. Good works on Political Economy are legion. The History and Economics of Transport by Kirkaldy and Evans and the various articles appearing from time to time in the service journals should be sufficient for Movements.

Some Indian Army officers select Urdu by reason of the fact that they already possess a certain knowledge of it. In most cases it is inadvisable as the standard required for the examination is high, and unless one has recently passed Proficiency or Higher Proficiency or their present equivalents, Urdu should be avoided. The fact that an officer passed Higher Standard Hindustani several years ago, or even recently, should not induce him to select Urdu as an optional subject. The time at his disposal will be insufficient to enable him to bring his knowledge up to the necessary standard.

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THE LANDING AT HELLES, 25TH APRIL 1915.

By Major A. E. Williams, D.S.O., M.C., South Wales Borderers.

In this paper I propose to try and give some idea of the part played by the 29th Division in the historic Landing at Helles on the 25th April 1915.

Space is not available in which to explain the inception of the Expedition, nor is it within the province of this paper to discuss the courses open to Sir Ian Hamilton.

The objective was Constantinople and the Bosphorus, as a preliminary to securing mastery over the maritime route from the Mediterranean to the Black Sea.

The first military problem confronting Sir Ian Hamilton was how to effect a landing in such a manner as to dominate the Narrows, let the fleet through into the Sea of Marmora and keep open the Straits behind them.

Sir Ian Hamilton's plan was to make two main landings—

(1) At Helles.

(2) North of Gaba Tepe.

While a subsidiary landing was to be made at Kum Kale, to prevent the enemy mounting guns at this place to shell the Helles Beaches, and a feint landing at Enos in the Gulf of Saros.

Here I am dealing only with the Landing at Helles.

The following are some of the main factors affecting the attainment of this plan.

1) "Surprise is the most effective and powerful weapon in war Whether in attack or defence the first thought of a commander must be to outwit his adversary. All measures should therefore be taken and every means employed to attain this end."

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By the time we landed the elements of secrecy and the probability of complete surprise were long since gone.

Naval activity had made it very clear that something was afoot at the Dardanelles and the assembly of a large force in Egypt and at Mudros must have confirmed the Turks in the knowledge that an attack was imminent.

Little effort seems to have been made to keep secret the destination of the 29th Division, and as early as the beginning of February, whilst we were forming in England, it was an open secret that we were for Gallipoli.

It was common gossip, too, in Egypt and written about at length in the *Egyptian Gazette*.

Strategical surprise was therefore impossible, but we had the initiative and the Turks could never be quite certain where we would land.

In other words tactical surprise was, to a certain extent, possible.

(2) For the operations in hand, good weather was essential. Generally speaking from November to April in these waters the weather is very unsettled. Winds spring up suddenly and a nasty sea gets up quickly.

With the slightest swell the transferring of troops from ships into the landing boats was impossible.

(*Cf.* effect weather had on the evacuation of Helles on the 8/9th January 1916.)

(3) There can be no doubt that the effect which the fire from the ships would be likely to have on the Turkish defences was overestimated.

The Turkish trenches were hard to locate and at the best of times a gun is not the best weapon with which to tackle trenches.

The configuration of the ground, a high cliff rising straight out of the sea with a hollowed out table land on top, made

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it more or less impossible for ships stationed close in to fire at much more than the face of the cliffs It is questionable whether the best use was made of the fire of the ships' guns.

I suggest that destroyers might have been given the role of running in close to take on the Turkish machine guns while the battle-ships and cruisers stood further out and took on the Turkish communications and kept their reserves off. They might also have tackled the enemy's artillery with aeroplane observation.

(4) Reconnaissances for a landing must be carried out very carefully so as not to give away the landing places to the enemy.

At Helles everyone down to battalion commanders went close in to the shore in destroyers. All military officers had to wear sailors' coats and caps and keep out of sight as much as possible.

These reconnaissances showed that the enemy was prepared for us and that the landing would be strenuously opposed. It was difficult to pick out all the enemy defences but several redoubts and lines of barbed wire were located. Aeroplane photos would have been of the greatest assistance but we had none of them.

It will be as well here to consider the topography of the portion of the theatre of operations with which we are concerned.

The sea shore is mostly steep with abrupt sandy cliffs rising from the sea to a height of from 100 to 300 feet. At regular and rare intervals these cliffs are broken by the ravines and gullies down which the winter rain escapes. At the mouths of these gullies are usually strips of stoney or sandy beaches.

Inland the ground is much broken and roughly indented with gullies, clefts and irregular valleys.

These gullies later proved very useful as avenues of communication. The most important of these are the Gully Ravine, Krithia Nullahs and the Kereves Dere.

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Five miles or so from Helles is the bare and lonely hill of Achi Baba rising to 700 feet. This hill commands all the landing places and the intervening country.

To the west on a prominent spur stands the village of Krithia. The Krithia-Achi Baba position is a strong one, naturally adapted for defence. The village of Krithia was of itself a very important place as it was from this direction that the hill of Achi Baba could best be approached.

The 29th Division assisted by some units of the Naval Division was detailed to make the landing at Helles.

A word on the composition of this division will not be out of place.

The infantry was the last of the regular battalions which could be collected from India and the Colonies.

With the exception of one Territorial battalion, the 5th Royal Scots, it all consisted of foreign service battalions. The artillery had mostly fought on the Western front, and all the staff and commanders were men who had already made their names in France.

The division represented about as fine a body of men as had ever been collected together, but with one disadvantage that there had been no opportunity for combined training. Such as we were we sailed from Avonmouth in the middle of March to meet the rest of the Force which was being collected in Egypt and at Mudros.

Unfortunately those responsible for shipping the troops did not know what the army was going to do, in fact there was not as yet any plan.

Units were packed anyhow on the ships; gunners without their guns and ammunition; R. E. without their stores; infantry without their transport.

It was therefore found absolutely necessary to re-organize the whole expedition.

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With few exceptions all the transports were turned off to Alexandria where three weeks were spent in reloading the ships.

After reloading, the fleet of transports left Alexandria for Mudros, the advanced base.

Here we spent about one week waiting for the whole force to assemble.

The troops spent the time in practising rowing and landing from small boats. Well did this training repay us later.

On the 23rd the fleet of transports left Mudros for Tenedos; on the 24th at Tenedos we transhipped into the warships; and at midnight on the 24-25th April, we stood out of Tenedos for the landing.

"The Day for which we had waited so long had come at last."

It was decided to land the Covering Force in five places; from right to left:—

"S", "V", "W", "X" and "Y" Beaches.

The general scheme was for "V", "W" and "X" Beaches to be the main landings, whilst the troops thrown ashore at "S" and "Y" Beaches would protect the flanks and threaten the Turkish communications.

It was hoped that by nightfall on the 25th April the Covering Force would have captured Achi Baba and Krithia; so this line might be said to be the objective for the Covering Force.

I will now give you a short account of what happened at the various beaches, commencing with "S" Beach in a little more detail than the others.

"S" Beach is just a narrow break at the foot of a rocky cliff on which stands De Totts Battery, an old destroyed work.

To the West lies Morto Bay, a sandy beach 100 ft. wide with shallow water where boats would be likely to ground far out. To the east lies the Dardanelles. The cliffs rise about 150 to 180 feet above the sea.

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The Beach is well sheltered from the prevailing wind, the N.-E. wind, but is very exposed to shell fire from Asia. The troops detailed for this venture were :—

2/South Wales Borderers (less 1 company).

A Detachment of R.E.

A Party of R.F A. 1 Liaison officer and signallers.

A Detachment of R.A.M.C.

A Beach Party of Marines and sailors from H.M.S. Cornwallis.

On the evening of 24th April we transhipped into Cornwallis a total of about 750 all ranks.

We were to leave Tenedos in 4 trawlers escorted by H.M.S. Cornwallis into the Dardanelles.

Each trawler towed alongside her 6 ship's boats and on entering Morto Bay the men were to be transferred into these boats, about 30 men to each boat.

When about a mile from the shore Cornwallis was to take station to cover the landing.

The trawlers were to steam in until their bows just grounded, when the boats were to be cast off and, rowed by soldiers, make for the shore.

The boats from which we were to land were the ordinary life boats one finds on the P. and O. Liners, capable of accommodating about 30 fully armed men, approximately one platoon.

One sailor was allotted to each boat to steer and make fast as soon as the boat grounded.

In each boat there were 8 rowers, 2 on each thwart.

Boats were equipped with 2 boxes of S.A.A, a few reels of barbed wire and pickets, about 10 picks and shovels and 3 days' water for 30 men sealed up in kerosene oil tins.

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Men (except "D" Company) were dressed in full marching order and carried—

S.A.A.—200 rounds per man (Signallers and H.Q. men 50 rounds).

Rations—One iron ration and two ordinary ones. The tinned meat was mostly issued in 7 lb. tins.

"D" Company had been ordered by the Commanding Officer, Colonel H. G. Casson, to land on the rocks under De Totts Battery rather to the East of "S" Beach.

Men of this company were landed in shirt sleeves without packs, but carried full ammunition, rations and water. All equipment and shoulders straps were to be undone for the landing, so that wounded men would not necessarily be drowned.

The current was running very strongly down the Dardanelles and for this reason the Cornwallis was late. We were supposed to land at dawn but, as it was, we did not begin to land until about 7-30 A.M. in full daylight. Picture to yourself 24 heavy ship's boats making for the shore in a heavy current rowed by men who had little or no training in rowing and you will realise what we were up against.

The diagram shows the arrangement of tows, though as a matter of fact units got very mixed up.

"C" Company on the left made for "S" Beach at the eastern end of Morto Bay.

"D" Company on the right swung away to the right and made for the point of Eski Hisserlik on the rocks under De Totts. The Turks were in a trench on some rising ground about 100 yds. from the water's edge.

They withheld their fire until "C" Company was close in to the shore and then a hail of bullets from rifles and machine guns struck the boats at point blank range.

Some boats never reached the shore, the men being killed or wounded, and the boats drifted out to sea.

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From other boats the men rushed through the water and reached the shelter of a small bank about high water mark.

In the meantime the leading boats of "D" Company had struck the rocks well to the right of the beach and the men, struggling through the deep water and over the rocks, had reached the shore right under the cliffs.

Thinking that a landing at this point was impossible the Turks had taken no precautions and with the exception of a few snipers there was no garrison at De Totts.

Without any hesitation the officers led their men up the steep cliffs. With a rush the whole ridge and battery was ours; and there below us, at our mercy, lay the Turks in the trenches which were holding up "C" Company.

The remainder of this company now fixed bayonets and under cover of fire from De Totts made a gallant charge.

13 Turks were taken prisoner and the remainder were killed or escaped.

Throughout the afternoon we could see plainly that the attempts of our troops to land at "V" Beach were unavailing. The question now was what were we to do. Remember we were only 3 companies.

The bolder spirits were for pushing on and trying to cut off the Turks at "V" Beach.

However the Colonel decided to remain at De Totts and consolidate our position, and undoubtedly this was the correct decision.

(*Cf.* what happened at "Y" Beach.)

Throughout the remainder of the day and the night the Turks made half-hearted attempts to approach our position and we were shelled from Asia, but little damage was done to us. Picket boats from the Navy kept up communication with us, took off our wounded and brought us rations.

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From De Totts we had a splendid view of what was happening in the direction of "V" and "W" Beaches and by means of the heliograph we kept the ships in the Dardanelles informed of the movements of the Turks.

COMMENTS.

(1) Value of landing at a technically unsuitable place. If "D" Company had landed at the same place as "C" Company where they were originally supposed to, we would not have got ashore without very heavy casualties.

(2) Importance of consolidating a position at once. Compare Y Beach and De Totts.

(3) Danger of defenders withholding their fire too long.

(4) The covering force must be lightly equipped. S.A.A. and stores should be carried in special boats, to be landed later when the beach has been made good. Our S.A.A. was very hard to get hold of as it was all over the place.

(5) Equipment must be undone so that it can easily be thrown off, otherwise wounded men are likely to be drowned.

(6) The use of the helio for signalling to ships.

Let us now turn to "V" Beach.

"V" Beach forms an ampitheatre 300 to 400 yds. in radius, the slopes to the beach being slightly concave.

The beach itself is about 10 yds. wide and 350 yds. long. Almost along the whole length of the beach is an escarpment about 4 feet high, which played an important part in the succeeding operations.

The beach was well sheltered from the N. E. winds but was exposed to shell fire from Asia.

The Turks had strongly defended the beach and also Sedd-El-Bahr village to the east.

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Three lines of protective wire and several lines of tactical wire had been erected, the first line being near the water's edge.

The beach was swept from end to end with frontal and cross fire.

The plan was for half a company of the Royal Dublin Fusiliers to be put ashore at the camber to the east of Sedd-El-Bahr while 2½ companies were to be landed on "V" Beach. As soon as these were disembarked, the River Clyde was to be run ashore.

This collier had been specially prepared. Big doors had been cut in her sides and planks from these outlets run down towards the bows for the men to walk down. Her stern had also been filled with ballast to make her take the shore properly.

Lighters were towed alongside ready to be got into position ahead of the bows to form a pier to the shore.

Maxims protected by sandbags had been mounted on the forecastle head and lower bridge to give covering fire to the troops on shore.

In the River Clyde were—

The Royal Munster Fusiliers.

1 company of Dublin Fusiliers.

2 companies of Hampshire Regiment.

1 Field Coy. R. E.

A total of about 2,000 all ranks.

At 6 A.M. the 3 companies of the Dublins in 20 ship's cutters towed by 4 picket boats (4 cutters to the tow) made for the shore under cover of a heavy bombardment from Queen Elizabeth, Albion and others.

The Turks withheld their fire until the leading boats touched the beach and then opened a murderous fire which wiped out practically the whole lot. Almost at the same time, the River Clyde struck the point under Sedd-El-Bahr. The Naval

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personnel, under Commander Unwin, now showed wonderful gallantry in getting the lighters into position. Three times the lighter pier broke adrift and three times it was remade in face of a withering fire. Company by company the Munsters rushed down the gangways and tried to win a way to the shore. All to no avail. The lighters were swept by shrapnel and machine gun fire at close range.

When the G.O.C. and Brigade Major of the 88th Bde. had been killed and most of the Munsters and the leading company of the Hampshires wiped out, a halt was called until dark. A total of about 400 men had won their way to the shore and these lay in a most precarious position under the escarpment previously referred to and in the rocks under Sedd-El-Bahr.

At 8 P.M. under cover of darkness the troops remaining in the River Clyde walked ashore without a casualty.

COMMENTS.

(1) The ineffectiveness of ships' guns against a well entrenched enemy.

(2) The Turks again withheld their fire. Had they opened earlier it is more than probable that not a boat would have reached the shore.

(3) The difficulty of landing on an open beach by daylight when opposed.

(4) Landing from the River Clyde made a defile, setting at defiance one of the principles of tactics.

Still the fact remains that more troops got ashore from the River Clyde than from the boats, and those who could not land were in comparative safety all day.

Provided you have got good enough land marks which can be seen at night, it seems that a landing from a vessel of this kind under cover of darkness affords great possibilities.

If the River Clyde could have been run ashore in the dark hundreds of lives would have been saved.

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"W" Beach consists of a strip of sand some 300 yds. long and about 50 yds. wide.

It lies south of Cape Tekke where a small gully opens a break in the cliffs.

On either side of the beach the ground rises precipitously but in the centre the approach to the ridge is easier.

The Turks expected a landing at this point and had accordingly prepared to oppose it.

Barbed wire had been erected on the shore and in the water while the high ground overlooking the beach had been fortified.

The Beach was well sheltered from the N. E. winds but could be shelled from Asia and the direction of Achi Baba.

The Lancashire Fusiliers were told off to effect the landing.

At 5 A.M. the covering warships opened fire against the beach.

At 6 A.M. the Battalion got under way for the shore.

The arrangement was for 8 picket boats each towing 4 ship's cutters (about 32 men per cutter) to move in line abreast.

It was hoped to be able to get ashore best in this way on a broad front.

Here again the Turks withheld their fire until the first boats actually reached the shore, but then they poured in a terrific fire with deadly effect.

Many a gallant effort was made to cut a way through the barbed wire. Six V. C.s were awarded for this, but had it not been for 2 platoons which veered away to the left and landed on the rocks beneath Cape Tekke, the landing would probably have met the same fate as at "V" beach. These platoons, just as the company did at De Totts, clambered up the steep cliffs and after a desperate fight disposed of the machine guns sweeping the beach from that side and enfiladed the Turkish trenches overlooking the Beach.

In the meantime a small party had scaled the cliffs to the south of the Beach, and although held up, by its fire managed to assist in keeping the Turks' heads down.

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It was now 9 A.M. and the Worcesters were thrown ashore at Cape Tekke; they and the platoons already on the cliffs pushed forward towards Hill 115; and at about 11-30 joined hands with the troops at "X" Beach.

The Worcesters now swung to the right and made for the high ground overlooking Cape Helles.

At 2 P.M. after the redoubts on hill 138 had been subjected to a heavy bombardment, the Worcesters advanced to the assault.

They gallantly cut through the wire and at 4 P.M. captured the redoubt on Hill 138.

An attempt was now made to join up with the troops on "V" Beach.

The remnant of the 86th Brigade pushed forward in an easterly direction along the cliffs.

Their attack was, however, stopped by the 9·2 Redoubt and a thick belt of wire.

COMMENTS.

(1) The Lancashire Fusiliers landed in full daylight on an open beach in face of determined resistance.
It is impossible to imagine a finer feat of arms than the storming of the trenches at "W" Beach from open boats.
(2) The Turks withheld their fire too long.
(3) The value of landing in a technically unsuitable place.
(4) "W" Beach was an obvious landing place. The Turks it was known were prepared. It is open to question as to whether it should not have been avoided altogether.

"X" Beach is just a strip of sand about 200 yds. long, at the foot of an escarpment about 50 feet high and nowhere difficult to climb.

It is well defiladed from fire from Asia, but is exposed to fire from the direction of Krithia and is open to heavy seas in the Gulf of Saros.

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Here a different story can be told.

The Royal Fusiliers were put ashore in two trips shepherded by Implacable which came close in with a dragging anchor.

Her fire at close range kept the Turks' heads down and allowed the Fusiliers to effect a landing with very little loss.

As soon as they had made good the escarpment they pushed on with the intention of joining hands with the troops at "W" Beach. The way was, however, blocked by strong entrenchments on Hill 115. Here also they were enfiladed by field guns at Krithia and, counter-attacked by superior numbers, had to give ground. The situation was restored by the arrival of the Royal Inniskilling Fusiliers and the Border Regiment of the 87th Brigade. Hill 115 was captured and the position round the beach was widened. Touch too was established with the troops at "W" Beach.

Further counter-attacks pushed our troops back, but they gradually consolidated a position and beat off all attacks.

COMMENTS.

(1) Here again British troops succeeded in landing in the face of opposition. But it must be remembered that "X" Beach was obviously an unsuitable place for landing guns and stores, and the Turks had not treated it very seriously and had not made the most of its possibilities for defence.

(2) The configuration of the ground made the fire from the ships' guns more effective. The Turkish trenches owing to the steepness of the escarpment were along the crest and this was kept under a very heavy fire by the ships.

(3) The enemy reserved his fire too long.

(4) As soon as they landed some of the troops moved off without waiting to reform, they consequently got very scattered and lost considerably.

At "Y" Beach the cliffs rise abruptly from the fore-shore, being so steep that it is practically impossible to climb them.

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In one place there was a small depression caused by a nullah which afforded an approach to the summit.

There was no shelter from the weather and the beach was exposed to fire from further up the coast.

It was a most unlikely spot in which to land and was consequently undefended.

The following troops were detailed for the landing:—

King's Own Scottish Borderers.

"A" Company, South Wales Borderers.

The Plymouth Battalion of Marines.

The troops, supported by the cruisers Amethyst and Sapphire, landed unopposed in three trips.

The orders to the Force were that as soon as the landing was made good it should move along the face of the cliffs and join hands with the troops at "X" Beach.

In this they were unsuccessful. The enemy had assembled a body of troops at the mouth of the Gully Ravine and these together with a reserve regiment from Krithia commenced to counter-attack. The height of the cliffs absolutely precluded any support from the ships' guns; so this small force throughout the remainder of the day and all night had to withstand innumerable attacks from a superior enemy.

With great gallantry, though driven right back to the top of the cliffs, it managed to hold off the enemy, but was compelled to re-embark the next morning.

The Turks had had such a doing that they did not follow up their advantage, so our force was able to withdraw without further loss.

As an example of the close nature of the fighting it is mentioned that a German officer brought a machine-gun on a pack animal through our lines and came into action in our rear.

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COMMENTS.

(1) This landing shows very clearly indeed the advisability of landing at a technically unsuitable place.
If a larger force had been landed at "Y" Beach it seems that its doings would have had a very important bearing on the operations.

We have already considered the importance of Krithia, and it would have been worth almost anything if we had been able to push in a large force and capture this place.

(2) No effort seems to have been made to consolidate any position until the troops were driven back. The troops therefore had no position on which to fall back.

To sum up the lessons of the Helles landing, the following are the points which strike one:—

(1) The need for secrecy.

(2) The hour for landing the Covering Force.
Would it not have been better if we could have landed in the dark as they did at Anzac?
The whole thing, of course, depends on whether the Navy can navigate the ships and boats to the right places in the dark.

(3) The fighting qualities of the Turks.

(4) The wide separation of force.
This was due to the fact that Sir Ian Hamilton wished to land as many troops as possible very quickly. This could not be effected without using a large number of beaches where the beaches were so small.

(5) It was known that "W" and "V" Beaches were strongly held. Would it not have been better to leave these alone or perhaps feint there, and to land the Covering Force at "X" and Gully Beaches? While at the same time a force of several battalions might have been landed at "S" Beach.

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"W" and "V" Beaches, which were undoubtedly the best beaches, could then have been used later, when cleared by the Covering Force.

(6) The possibility of the use of smoke or artificial mist for blinding the enemy's machine guns is worth considering.

(7) The advisability of including some Pack Artillery with the Covering Force.

(8) The necessity for having a floating reserve ready to be thrown ashore at any place made good. What an advantage it would have been if there had been a reserve available to be thrown ashore a "Y" Beach.

After the Landing.

The situation on the night of the 25/26th April, is shown in the sketch map.

On the morning of the 26th April, the troops at "V" Beach advanced with the greatest gallantry and after very heavy fighting captured Kharab Kala Redoubt on Hill 141. The attacks on this Redoubt were organised and led by three staff officers, Lieut.-Colonels Doughty Wyllie and Williams of the Headquarter Staff and Capt. Walford, the Brigade Major R. A.

The troops from "W" Beach also pushed across the top of the cliffs, captured the 9·2 Battery overlooking "V" Beach, and joined hands with the troops at "V" Beach.

The landing at this Beach was now secure and additional troops, mostly French, were landed.

The French now began to work round Morto Bay towards De Totts which they reached on the evening of the 27th April.

On the whole very little advance was made on this day. By evening the troops were on the concave arc of a circle extending from "X" Beach round the toe of the Peninsular to Morto Bay, De Totts being held by the South Wales Borderers.

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There was no depth in the position and the beaches were not even immune from rifle fire.

On the 27th April an advance was ordered to straighten out the line. The 29th Division advanced on the left and centre and 4 French battalions on the right.

In the late evening the French joined up with the South Wales Borderers at De Totts and this battation was ordered forthwith to rejoin the remainder of its brigade at "X" Beach.

The line now ran from De Totts across the Peninsular to "X" Beach.

The plan on the 28th was for the whole force to advance and capture Krithia and Achi Baba.

1st French Division advanced on the right.

88th Bde } of 29th Division advanced on Krithia.
87th Bde. }

86th Bde. in reserve.

The advance at first was very successful, but the Turkish defence began to stiffen at about 11 A.M. and by 12 noon all the brigade reserves had been used up in keeping the attack moving.

At 1 P.M. the 86th Brigade was ordered through the 88th Brigade to seize Krithia.

Small reconnoitring parties got to within a few 100 yards of the village but the main body of the brigade made little progress. At 2 P.M. all the troops were in the firing line.

The men were exhausted, the few guns landed were insufficient to afford adequate artillery support, and we were very short of S.A.A. as no transport had yet been landed.

At 3 P.M. the Turks launched a series of determined counter-attacks. The initial blow fell on the Senegalese who were driven back. This uncovered the right of the 88th Brigade, and this brigade was gradually forced to give ground.

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The 86th Brigade now became involved.

At this time the situation was very serious and it looked as if we should all be pushed into the sea.

However, the right of the 87th Brigade stood fast and saved the day.

Fighting stopped at about 7 P.M. and both sides were exhausted. The Turks withdrew to the lower slopes of Achi Baba, and we consolidated our position.

COMMENTS.

(1) Inadequate arrangements made for the supply of ammunition.

(2) The skill of the Turks in taking cover and also their offensive spirit.

(3) The Turks were done and we could see them withdrawing from Achi Baba. If we had only had one more push left in us we would have taken Krithia and Achi Baba. One more fresh brigade would have won the day for us.

(4) The real reason for our failure was lack of artillery.

On the 29th and 30th April all was peace. We spent the time in consolidating our position.

A few more battalions of the Naval Division and the 29th Indian Brigade were landed.

The 1st May passed quietly, but the lull was rudely broken at about 10 P.M. by a short but very violent bombardment from light artillery.

Before we realised what was happening, with cries of "Allah" the enemy was upon us.

The leading waves had no ammunition but simply came on with the bayonet.

The first momentum of the assault fell on the right of the 86th Brigade in the Krithia Nullah. A nasty gap was made in the line and some 200 Turks got through to "W" Beach.

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They did not return.

The gap was closed by the 5th Royal Scots who made a bayonet charge and by the Essex Regiment which was sent up by the 88th Brigade.

Further on the right the Senegalese were driven back in the direction of De Totts, and three of our field batteries were nearly over-run by the Turks.

Very severe hand to hand fighting took place all night long. As soon as one lot of Turks was beaten off another line came on in mad endeavour to drive us into the sea.

The thin line held in spite of all their efforts and when day broke the whole of our line advanced driving the remnants of the Turks before it.

Our advance, however, soon came to a full stop. The enemy counter-attacked with fresh troops and we were driven back to our original line.

The Turkish forces employed in this great attack were estimated at 20,000, and their losses were enormous.

The blow we struck them that night taught them a lesson which they never forgot.

It is a debatable point as to whether it was sound to advance the next morning with worn-out troops.

How very near the Turks were to accomplishing their object in driving us into the sea only those who were present can say. Commanders had few reserves with which to influence the fight and so it was primarily due to the wonderful fighting qualities of each man and the gallant leading of the regimental officers that all their efforts were unavailing.

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THE MILITARY PROBLEM OF THE RHINELAND.

By Capt. C. F. Marriott, 20th Lancers.

The financial and economic problems raised by the occupation of the Rhine and Ruhr valleys are of primary importance to Great Britain, but France, a country almost entirely self-supporting, and in territorial contact with her ancient foe, is mainly concerned with the military aspect of the situation, which the average Englishman is far too prone to ignore.

The Treaty of Frankfort imposed upon France a permanent strategical and industrial handicap, to which was added later a very rapid increase in the population of Germany, whilst that of France remained stationary. It is impossible for anyone who has not lived amongst the French people to realise the ever present threat of war imposed upon them for more than a generation, coupled with the knowledge that they would have to enter upon such a war under the very gravest disadvantages, the nature of which I have stated above. The two chief military measures which the government took to meet this menace were firstly, the rigorous enforcement of Universal Service throughout the length and breadth of the Republic and secondly, the fortification of the Eastern frontier at vast expense.

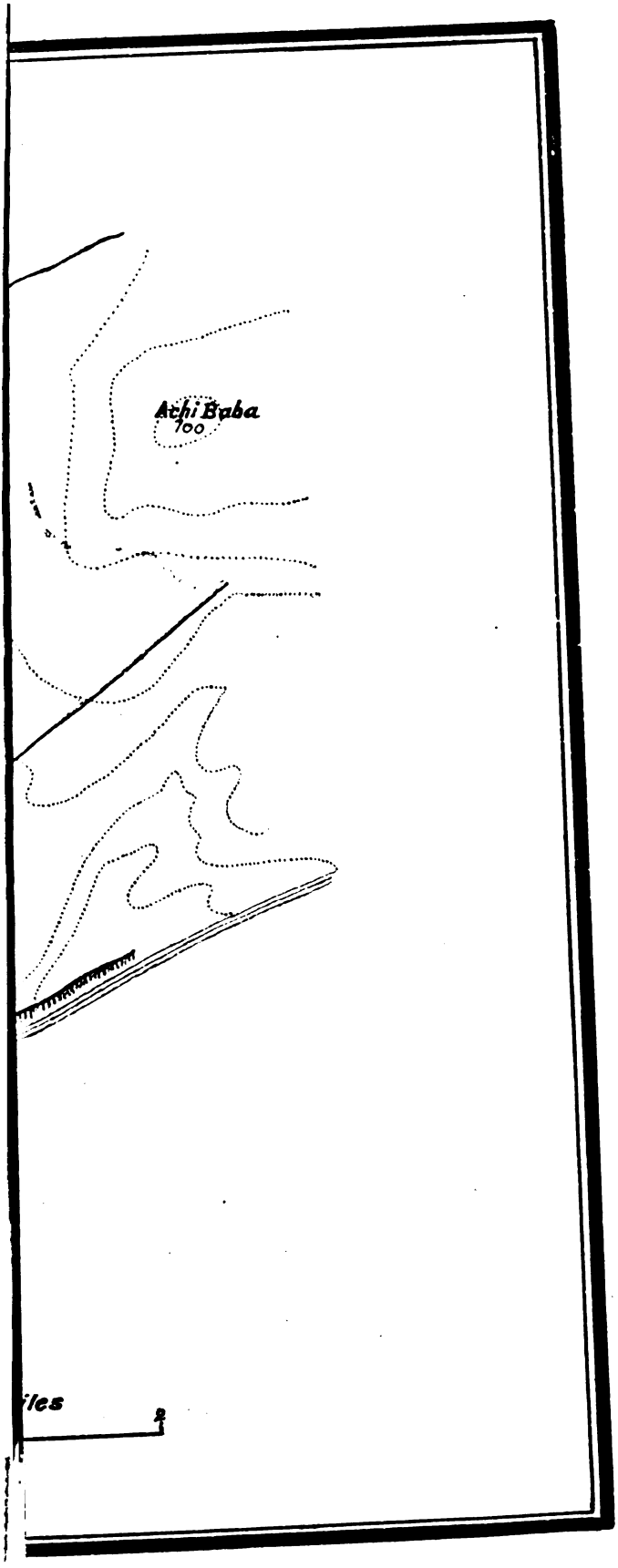
Much righteous indignation was lavished in England over the violation of Belgium, but France had far greater reason for anger. At the time of the founding of the Entente, when joint military action was first discussed between the two general staffs, the British representatives were most insistent that in deference to public opinion in England, France should respect Belgian neutrality most strictly. This undertaking the French observed at the outbreak of hostilities, and thereby lost any chance there

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may have been of holding up the German advance through the narrow gap between Givet and the Dutch frontier at Maestricht. The Vosges fortresses which had cost millions to construct were turned, and the industrial north laid waste for over four years.

War of course is War, and it is true that at times military necessity knows no law, but such a plea is an idle one for a vanquished people to make to their conquerors when at last the day of reckoning dawns. Prussia well nigh won the war at the outset by a ruthless and treachorous act, she has yet to pay the penalty, and France as a nation is irrevocably resolved that the penalty shall be the sundering of the Rhineland from the German Reich. At the Peace Conference, Marshal Foch, speaking not as a grasping conqueror but as a far seeing patriot, who put small faith in the idealistic claptrap which was then so fashionable in diplomatic circles, urged persistently with all the eloquence at his command that control of the Rhineland was essential to the security of France, and also to the peace of Europe so far as any man could foresee the future. As a boy he had witnessed the defeat and humiliation of his country in 1870, and in his old age he survived to lead her armies and those of her allies to victory, but only after nearly ten per cent. of her male population had fallen on the battlefield. The counsel of the man of action was ignored and the voice of the politician prevailed. France agreed to give up all claim to the Rhineland in exchange for a definite guarantee of military support from both Great Britain and the United States. At the same time the Rhineland was virtually handed over to her as a hostage for the fulfilment of every clause in the Treaty of Versailles. Now that this guarantee, solemnly entered into by the accredited plenipotentaries of both nations, has been definitely repudiated, without France having any say in the matter, is it reasonable to expect the latter to withdraw from the territory which she has coveted since the days of Henry of Navarre?

Possession of the Rhineland confers upon the holder, whether it be France or Germany three advantages of an overwhelming

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character in the event of war. These are, firstly, strategic position, secondly, industrial wealth, and thirdly, man power. Should the valley of the Rhine pass into French hands, Germany will have to construct an entirely new railway system before she can concentrate her field armies within a hundred miles of the river, whilst the factories of Westphalia are at the mercy of an invader. Above all it would become out of the question for her to invade Belgium again by a *coup de main*, with all that such a stroke entailed.

Important as are the above considerations, the vital aspect of the Rhineland is its vast industrial wealth. The possession of this wealth made Germany the bellicose and domineering nation which this generation has known so well. It was thence that she drew the stores of munitions which enabled her to carry on hostilities for more than four years although the ocean highways were denied to her from the very outset. The passing of the Rhineland back into Germany's hands will at once encourage all her numerous chauvinistic elements to prepare feverishly for a war of revenge at the very earliest possible moment. Its retention by France will relegate all such dreams to a dim and distant future.

It may however be argued that ownership of the Rhineland will render France as great danger to the peace of Europe as was Germany from 1871 to 1914. The answer is that there is no real parallel between the two cases. Prussia, and those states which accepted her leadership, won the wars of 1866 and 1870 in a very short time, and at a trifling cost in casualties. France on the other hand has suffered infinitely heavier losses than her vanquished antagonist. The wealthy industrial districts of the North have been deliberately and wantonly ruined, and their complete recovery is a matter of many years. Moreover, had the British Empire sustained proportionate casualties to those of France, I am ignoring all coloured races in the comparison, our dead would have numbered between 2½ and 3 millions.

Never again in the lifetime of this generation, which has triumphantly avenged the agonies and humiliations of 1870, will

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France draw the sword, if by virtue of ceaseless vigilance and military readiness it can be kept in its sheath. Beyond such a period of time no man can foresee the future, and the indirect authors of most of the miseries suffered by mankind in war, are those deluded visionaries, who at the Hague and Geneva seek to legislate for and control our destinies centuries ahead.

The question of the inhabitants of the Rhineland under prospective French rule is of course a delicate one. There certainly exists a Separatist Party strong both in numbers and authority, but it is idle to deny that the vast majority of Rhinelanders are bitterly Francophobe. Nevertheless it is unreasonable to demand that our Western Civilization should remain exposed to a second attack by Germany, more formidable perhaps even than the last, merely in order to preserve a few millions of the Teutonic race who have little real kinship with Prussia from a certain period of inconvenience. With the passing of a generation the vast majority will perform their military service in perfect contentment beneath the Tricolour of the Republic.

Lastly lest the writer should appear unduly Francophile, the history of England's Continental wars should be borne in mind. In the days of the Plantagenets we had the active support of much of what is now France. The composition of the armies which won Blenheim, Minden and Waterloo is too well known to require recapitulation. In one European war only have we been destitute of allies, and in the course of that struggle we lost temporally the command of the sea, and with it our American colonies. The principle of the Balance of Power remains as essential to us as ever it was, the vapourings of politicians cannot outflank the infinite, or even alter concrete facts. We must range ourselves upon the side of France or of Germany, and the latter is unthinkable, since sentiment apart she would make use of us to crush France, and then would never rest until either by war or by diplomatic pressure she had made of us what Austria was to her before

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the War. As regards France although Radical and Labour opposition may render the conclusion of an alliance, with the definite guarantees of military support which such an undertaking would entail, undesirable for the moment, we can nevertheless support her morally to the best of our ability, in acquiring that security, without which there can be neither peace nor stability in Europe.

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NOTES FOR A SHOOTING TOUR TO THE PAMIRS, THIAN SHAN, AND THE ALTAI.

(*You must leave Kashgar on return trip not later than 1st October.*)

Route.—From Srinagar (Kashmir) 40 marches to Kashgar *vid* Gilgit, Hunza and the Chinese Pamirs.

Srinagar to Gilgit, 13 marches, good road and fit for horses throughout. Bungalows at each stage, supplies and transport available. S. and T. Depôts at Bandapur, Astor, and Bunji, on this section, where supplies and fodder can be obtained

Gilgit to Baltit, the capital of Hunza. Four marches, good road and same as Gilgit-Srinagar section in every respect. Mir of Hunza lives at Baltit and a visit should be paid to him. He always does his best for travellers especially if in any way known to him.

Total distance from *Srinagar* to *Baltit*—about 282 miles.

Baltit to Mintaka Pass (the Anglo-Chinese frontier). Distance 90 miles. Stages are as follows:—Atabad, 11 miles; Gulmit, 10 miles; Passu, 10 miles; Khaibar, 14 miles; Gircha, 13 miles; Misgar, 12 miles; Murkush, 14 miles; Summit of Mintaka Pass, 12 miles; Ovis poli one march beyond Mintaka.

Road passable throughout for horses, but is often difficult in places during the summer owing to high water in the Kanjut River. Parris and paths over the precipices are frequently very shakey and great care has to be exercised in getting animals down. Houses can be obtained at each stage of the rough country type, but it would be well to carry tents from Baltit to the frontier, after which they are not required as far as Kashgar where others might be borrowed,

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Supplies and transport available for a small party of from three to six persons. Coolies: Srinagar—Gilgit, 8 annas per stage; Gilgit—Mintaka, 12 annas.

Mintaka Pass to Kashgar, 298 miles, 14 stages. Going very good throughout, except in the Gez defile where it is extremely rocky for 65 miles but quite easy for horses. Supplies and transport, and fodder and grass for horses, available at each stage.

Accommodation can be had in the shape of khirgas, felt tents, at most stages. Yaks for transport of kit available. Yak hire Re. 1 per day. Carries 120—150 lbs. Riding yaks Re. 1 per day.

Notice of approximate arrival at the frontier should be given to H. M. Consul-General, Kashgar, who would conclude the requisite arrangements for the onward journey from the frontier to Kashgar, etc.

Money.—In Gilgit and Hunza, Indian currency, in Chinese territory, Chinese currency, but Indian money is accepted from the frontier up to Tashkurghan, five marches further on. Indian money can be changed at latter place by the British Aksakal, or Consular subordinate.

Language.—Hindustani very largely understood throughout Gilgit and Hunza, but Turki is spoken on the Pamirs and in Central Asia generally. It is always possible to get men speaking both Hindustani and Turki at Tashkurghan.

Shikaris and servants.—For ovis poli shooting on the Pamirs shikaris of sorts can be arranged for through the Consul-General, also servants for rough camp work, looking after kit and running transport, etc. Consul-General has a register of reliable men.

Kashgar to the Thian Shan—Can be done in 15 stages if marching hard, but 25 days should be allowed. Route is through the Kashgarian plains and northwards over the Muzart Pass to the Tekkes Valley where ibex, wapiti stag, ovis ammon, roedeer, bear, etc., are found, Yarkand stag can be found five marches from Kashgar

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Supplies and transport available throughout, servants could be obtained in Kashgar, and good Kalmuk shikaris in the Takkes Valley itself who know every inch of the ground.

Thian Shan to the Altai, 20 days, level going, largely over grass country, supplies and transport available, and no difficulties in normal times. Game to be found in the Altai Mountains—ovis ammon, Altai stag, roedeer, bear and snow leopard.

Approximate total period for trip, Srinagar-Pamirs-Kashgar-Thian Shan only and return to Srinagar would be, allowing for time in each shooting area, 7 months.

Consul-General, Kashgar, would always be glad to give any information and help in any way.

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REVIEWS.

BABYLONIAN PROBLEMS.

By Lieut.-Colonel W. H. Lane, Indian Army (retired).
(Messers. John Murray, 21s.).

This book must be viewed from a special standpoint of its own. At first sight the problems of Babylonia might seem to be essentially those of the archæological specialist. And the author would be the first to admit that in matters archæological he is an amateur. A very well informed amateur, it is true; but still an amateur. What useful purpose then, it may be asked, can such a book fulfil?

The answer of course is this: In any given area under investigation, the work of archæological research should proceed methodically by a definite process. Firstly, there is the surface survey. This first phase demands no technical knowledge of archæology; witness the admirable Palestinian survey carried out by Lieut. Kitchener in the early seventies, the expenses of which were borne by the Palestine Exploration Fund. This survey has been the basis of all subsequent Palestinian research. Secondly, there is the collection and decipherment of all visible inscriptions which may exist within the area. Here of course we enter the realm of the specialist. And his decipherments will doubtless lead to changes in the identifications already tentatively allotted to sundry sites. Finally there comes the work of excavation. Digging is a toilsome, expensive and destructive business; hence the necessity for the accumulated knowledge of the two earlier phases. Ill-considered excavation is likely to be fruitless or, what is worse, may even be destructive of treasures much greater than any it unearths. For instance

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we now know that there are nine buried cities in the mound of Hissarlik, the site of ancient Troy, and that Troy itself is, in fact, the sixth of those super-imposed cities. In 1870, Schliemann, who was the first to excavate this site, believed Troy to be the second of these successive cities. In his eagerness to unearth the heroes of the *Iliad* he actually destroyed much of what he was in search. So much, then, for unscientific excavation. But, though their surpreme function is to reveal to us the intimate life of lost civilisations, the pick and the shovel used scientifically must ever be the final arbiters in dating and fixing the identity of ancient sites ; of which perhaps no better instance could be quoted than the work of Professor Flinders Petrie at Tel-el-Hesy, where by establishing the seriation of Palestinian pottery through successive strata he has rendered it possible to date any given Palestinian mound with accuracy, and has thereby revealed numerous errors in the identity of sites fixed by the Kitchener survey.

We see then that in scientific archæological research the preliminary survey, though open to subsequent correction by the spade, yet plays an all-important part in directing the activities of the digger. Now in this particular respect Assyria and Babylonia have not been too well served. Whereas in Egypt the area to be surveyed consisted of narrow riverine strips on either bank of the Nile, of which Lepsius in 1840 completed the surface-survey for all time, while in Palestine there was the Kitchener survey to which reference has already been made ; in Iraq and the contiguous districts of Persia the area to be surveyed is enormous. the sites are almost innumerable, and no complete survey has ever been carried out from an archæological standpoint.

In fact until the war maps of any sort were lamentably defective—based as they were largely on the data collected by General Chesney's expedition to the Tigris and Euphrates in 1835–37.

The war has at least altered the position in regard to accurate maps. The whole of Iraq has been surveyed, and much of the

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detail has been filled in from aeroplane photographs. Hence for the first time a complete survey is available, though in this survey archæological information is of course largely incidental.

When, therefore, Colonel Lane found himself stationed in Iraq during and after the late war, he had at his disposal accurate topographical information of the area never before available. And he had further advantages in carrying out an archæological survey. Firstly, he was a soldier. Now the Empires of Babylonia and Assyria were essentially military empires. Hence we might expect that the true significance and interpretation of many of their works would be first apparent to the military mind. Secondly, Colonel Lane has made a particular study of military topography and was therefore peculiarly fitted to deal with the topographical problems involved. Lastly, Colonel Lane has taken pains to make himself thoroughly familiar with the literature of his subject, both classical and modern. Hence we see that he was in a position to make full use of his opportunities when in the course of duty he found himself stationed at different times in most of the areas of historical interest. The result is the present book. It does not pretend to elucidate doubtful texts or to upset accepted chronology. Its aim is a more accurate identification of ancient sites deduced from the topographical information at his disposal. The final verdict must still rest with the pick and shovel. But the author's success may be gauged by the fact that he has now been invited to accompany the British Museum expedition to Babylonia.

Colonel Lane's first three chapters deal with the determination of the site of Opis, which he identifies with the Tel Abir group of mounds in the neighbourhood of Balad opposite the mouth of the Adhaim. It is unnecessary to follow his arguments in detail; but he makes out a convincing case, and the correct determination of this site is of importance in the solution of many Babylonian problems. Opis, we may remark in passing, is first mentioned in the Senacherib Bull Inscription, No. 2, of 694 or 693 B.C. This inscription deals with Senacherib's astonishing

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amphibious expedition against the fugitive Chaldeans who had taken refuge in the coastal territories of his old enemy the King of Elam, near the mouth of the Karun. Having constructed his fleet of mighty ships at Ninevah on the Tigris by means of captive Hittite labour, Senacherib collected skilled crews of Greeks, Tyrians and Sidonians and had the fleet towed down the Tigris to Opis. Thence he transferred his fleet on rollers and by canal to the Euphrates and sailed down to the Persian Gulf. There the army was embarked and, after due sacrifice to the goddess of the Abyss, set sail across the " bitter river."

Complete surprise was effected and the Chaldean settlements were destroyed. Truly a model expedition for all who seek to conduct combined naval and military operations.

In his succeeding chapters Colonel Lane deals with the geography of Mesopotamia as described by ancient writers ; with the route followed by the Ten Thousand in their great retreat ; with the invasion by Julian the Apostate ; and finally with the dimensions of ancient Babylon.

It is interesting to note that he places the scene of Julian's death at Kifri, and that he finally explodes the theory that the huge mound to the North-East of Samarra marks that emperor's grave. According to Ammanius, Julian was in fact buried at Antioch. Both as soldier and as statesman Julian is surely one of the very greatest figures of the Roman Empire. And his advance to the walls of Ctesiphon a venture worthy of the great Alexander himself who served him for a model. With him was buried the last hope of a re-established Roman Empire in Mesopotamia.

The concluding half of the book is devoted to translations of, or extracts from, the various authorities cited in the text, ranging from Senacherib's inscriptions to the Holy Bible. The book is pleasantly written and well illustrated. It cannot fail to find numerous readers at a time when so many of us have actually seen the lands which it describes.

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THE CAMPAIGN IN MESOPOTAMIA, 1914-18. VOL. I.

Compiled by Brig.-Gen. F. J. Moberly, C.B., C.I.E., D.S.O.
Official History of the Great War, H. M. Stationary Office, 15s.

This, the first volume of the Official History of the Mesopotamian Campaign, deals with the period from the outbreak of war with Turkey to 5th October 1915. The period was one of almost unbroken success, and closes with the battle of Kut and the pursuit to Aziziya by Townshend's victorious 6th Division.

After devoting the first chapter to a general description of Iraq, Brig.-General Moberly gives a brief summary of its history from the invasion by Hulagu and his Mongols in the thirteenth century down to the accession of Abdul Hamid, whence the account is carried in greater detail to the outbreak of war. One point there is about Hulagu's invasion which the author omits. Previous invaders had left the great irrigation system of the country almost untouched. There may have been isolated acts of Vandalism in earlier times—such as the destruction of Nimrod's Dam—but it was reserved for the Mongol not only to massacre the inhabitants—that had been common practice—but by the wholesale destruction of the irrigation system to render the country's subsequent recovery impossible.

Brig.-General Moberly then discusses the genesis and development of the Baghdad railway, the conventions relative to which were on the point of ratification when war broke out; the complicated negotiations about British rights of navigation on the Tigris and Euphrates; and British relations with Persia.

He next turns to the army in India and to pre-war military policy. This chapter is particularly valuable. In it we find a brief but clear account of all the great milestones in Indian military development from the post-Mutiny reorganisation to

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1914. The two last milestones are likely to be found the most interesting; *viz.*, the Kitchener reorganisation of 1904—08, and the recommendations of the Army in India (Nicholson) Committee of 1912. The proceedings of this Committee have never yet been published in full. The majority report advocated what amounted to a purely home-defence army for India, and—though the Agadir incident of 1911 must have been fresh in all memories and its true significance as described recently by Mr. Churchill must presumably have been known at least to the president—the possibility of war with Germany apparently received little attention. War with Germany actually broke out before effect could be given to the recommendations of the majority report.

To turn now to the actual operations: The gradual growth of their scope has peculiar interest in the light of after events; even as early as October 1914, immediately after the occupation of Basra, we find Sir Percy Cox broaching the question of an advance to Baghdad. At first the object laid down for the operations was the occupation of Basra and of the Shatt-al-Arab up to that place. But the safety of the oil refinery at Abadan and of the pipe-line running thence N.N.E. for some 150 miles through Persian territory to the oil springs, was a source of constant anxiety to the Admiralty. And the occupation of Basra obviously did not safeguard the pipe-line.

Qurna then became the objective. But even with the occupation of Qurna on 9th December 1914 the position was still no easy one. Initiative rested with the Turk. And he had a variety of covered approaches by which he might threaten sensitive spots. He might move directly down the Tigris against Qurna; he might move from Amara eastward into Arabistan to threaten the pipe-line; utilising the line of the Hai for his lateral communications he might turn our Western flank and threaten Basra *vid* Shaiba. He did in fact attempt the two latter courses; and at Shaiba, the "soldiers' battle", we had little enough in hand by the evening of the third day.

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But fortunately at this stage of the campaign the Turkish higher command in Mesopotamia was incompetent, and it made poor use of its opportunities. One can imagine with what skill a Stonewall Jackson would have handled the situation; how he would have paralysed his opponents by playing on their fears with well-timed feints against the pipe-line—to evoke demands from the Admiralty for the linear defence of 150 miles of front—before he struck his blow.

After the defeat of the Turkish counter-stroke at Shaiba on 14th April 1915 General Nixon turned his attention to Arabistan, where after the unsuccessful action of 3rd March at Ahwaz the situation had been causing some anxiety. There was little serious fighting and Arabistan was cleared by the beginning of June; but the troops engaged were obliged to operate under the most trying climatic conditions and casualties from sickness were heavy.

Simultaneously General Nixon was preparing to strike a blow against the Turks facing him on the Tigris above Qurna, where General Townshend had arrived at the end of April. The second action at Qurna fought on 31st May must surely be one of the strangest battles in the history of land-warfare. Owing to the floods our troops had to manœuvre in fleets of *bellums* against the Turkish trenches sited on isolated islands which still rose above the floods. The action was entirely successful; and was followed by Townshend's dramatic pursuit by water to Amara and his almost single-handed capture of that town after he had dispersed some 2,500 Turkish troops who were in or near it. When General Townshend hoisted the Union Jack on the Custom House at Amara shortly after 2 P.M. on 3rd June, he had with him only a few officers and forty-one men on five small launches. No support reached him till 6-30 A.M., next day. Meanwhile he had taken 800 prisoners and had driven off a further column of 2,000 Turks who had appeared from the direction of Amara. The Turkish military barracks were held throughout the night 3rd/4th June by four British seamen. Such are the rewards of well-timed audacity when the enemy are on the run.

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The line of the Euphrates still remained to be secured. Sanction to the occupation of Nasiriya was obtained on 22nd June. The operations were entrusted to General Gorringe, and Nasiriya was occupied on 25th July after severe fighting. The rapid falling of the Hamar Lake across which our communications ran greatly increased the difficulty of the operation.

A further advance to Kut-al-Amara was now recommended by General Nixon. Briefly the arguments for a further advance were these. The occupation of Kut would give us command of the lateral line of the Hai and so permit of a reduction in the garrison of Nasiriya; and we should complete our control of the Arab tribes of the Basra vilayet—notably of the Bani Lam—finally safeguarding the pipe-line against aggression from the Tigris. The battle of Kut was fought and won on 28th September. General Townshend had planned the operation so as to employ his famous Napoleonic "mass of manœuvre" by a wide turning movement against the Turkish left. The Turks were strongly entrenched and fought stubbornly. They effected an orderly retreat to the Ctesiphon position. The pursuit ceased on 5th October at Aziziya, 105 miles by river above Kut.

It is worthy of note that during the period in question the medical arrangements were generally adequate, though until July 1915 one hospital ship only had been allotted to evacuate sick and wounded, both from Mesopotamia and East Africa. River craft, however, were never more than sufficient for normal maintenance and minor troop movements, while the first aircraft did not arrive until May 1915 and at the battle of Kut, only * five machines were available. The difficulties and delays in the system of control are obvious: the chain of responsibility ran from Mesopotamia through the Government of India, and thence to the Secretary of State for India who was ultimately responsible to the Cabinet.

* 3 aeroplanes, 2 seaplanes.

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As Brig.-General Moberly tells us in his preface criticism forms no part of his narrative; facts are stated and must speak for themselves. In an official history this is probably the most satisfactory method. And it has the advantage that the student is obliged to exercise his critical faculty on the data supplied. Still the student would welcome reasoned and moderate comment such as is to be found in General Bird's "Chapter of Misfortune" and in the papers by the same author which are appearing in this journal.

The literary style of Brig.-General Moberly's volume is delightful. The reader is carried on without effort, and is never allowed to lose the continuous thread of the operations in spite of necessary digression. The numerous maps are all that could be desired.

NATIONAL POLICY AND NAVAL STRENGTH. XVITH TO XXTH CENTURY.

By Rear-Admiral H. W. Richmond, C.B.

It would be hard to find a subject of greater interest to an island race than that of National Policy and Naval Strength. The magnitude of the subject in the case of Great Britain is immense, and, in choosing this subject for the Raleigh lecture delivered to the British Academy on February 21st, 1923, Rear-Admiral H. W. Richmond has confined his review to the period from the 16th to the 20th Century. Even so the subject, in the time at the disposal of the lecturer, could only be treated in broad outline.

The period selected opens in the age when our national policy was emerging from the restricted field described by a 14th century writer, who says that the true process of English Policy was "to cherish merchandise, keep the Admiralty, that we be masters of the Narrow Seas."

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After the reign of Henry VII our trade had spread beyond the Narrow Seas to the Mediterranean and the Eastern shores of America. From that date onward the lecturer traces the development of the principle that no policy is of value which lacks the power to execute it. He shews how our policy has been moulded and proved successful by virtue of the recognition that our power was derived from the sea. The maintenance of that power has demanded not only alliances and wars to keep essential bases of offence and defence in our control but, in addition, active legislation to foster the merchant navy.

Admiral Richmond points out that the Raleigh lecture seeks to keep alive the memory of Raleigh, the times in which he lived and the influences of the thoughts and actions of the spacious Elizabethan period. The lecture is, in consequence, retrospective and the reader will find cause for regret that time was not available for consideration of the subject from the standpoint of our position to-day. The development of aerial warfare and the incipient growth of commercial flying place us again in a position very similar to that confronting the Elizabethans. Our problem, embracing an additional element, is harder and the conclusions drawn by an eminent Naval Officer from his survey of the past would have been of great interest.

THE LIFE AND LETTERS OF SIR JOHN MOORE.

The life of Sir John Moore, the light infantry spirit which he instilled in all under his command, his system of training troops, his brilliant advance against the overwhelming forces of Napoleon, his retreat to Corunna and his death in the hour of victory, have always been subjects of study and interest to British officers. While his friendship for Lady Hester Stanhope, his alleged engagement to her, and the romantic reverence for

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his memory and his relics which inspired that remarkable lady in her long residence in Lebanon, have always appealed to lovers of romance.

The biographies themselves of Sir John Moore have been written at length; his diary especially, edited by Major-General Sir Frederick Maurice, tells the story of his many campaigns. The life* and letters now published which include an introduction by Sir Aylmer Hallane are of great interest to those—and they cannot now be many—who have time to explore the details and the controversies of his campaigns in the Peninsular and of Sir Ralph Abercromby's expedition to Egypt.

To the ordinary military public of to-day with the vast literature of the late war to study, the lesser whys and wherefores of Sir John Moore's day are probably more than they have time and inclination to tackle, but those who adventure will find in this fascinating collection of letters many side-lights on the extreme difficulty of Sir John Moore's position with his force in Spain. Absolutely unsupported by the forces of Spain, he was faced with the overwhelming forces of France led by the redoubtable Emperor himself, against whom with the exception of "the Duke" at Waterloo, no British General has ever been called on to operate. And yet, knowing the difficulties, the dangers, and practical impossibility of his task, he deliberately advanced into the heart of Spain to strike at the French lines of advance, because he felt it was his duty to endanger himself and his force to back up the somewhat wild-cat policy of the British ministry in endeavouring to support an unworthy Government.

Misled by false reports of the spirit of the Spanish and, to some extent, against his better judgment but in pursuit of his resolution to be true to the policy of his Government, he advanced

* "The Life and Letters of Sir John Moore," by Beatrice Brownrigg, published by Basil Blackwell, Oxford.

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against Napoleon until his threat brought down on him the Emperor himself and almost every French army in Spain, thus giving the defeated Spanish army time to refit and re-equip and practically saving the major portion of Spain from being thoroughly over-run.

Just as Napoleon after the battle of Quatre Bras himself led the pursuit of the British in the hope of compelling them to fight and subject themselves to his tactics and his overwhelming columns, so did Napoleon here throw himself into the pursuit of the British and exert all the driving powers at his disposal to bring Sir John to a battle which could only have resulted in his being overwhelmed and absolutely destroyed.

The story of Sir John's retreat in execrable weather to Corunna, of the indiscipline of his troops which drove him to fiercely criticise his officers and the remarkable rally which his army made on the heights of Corunna, are happily still a household word with us. To those who would probe the side-lights and Sir John's own feelings and his own thoughts on the strategical problem before him, the perusal of this new volume will be full of interest.

MILITARY ORGANIZATION AND ADMINISTRATION.

By Major W G. Lindsell, D.S.O., O.B.E., M.C., p.s.c., R.A.
(Gale and Polden Ltd., Aldershot, 7/6.)

In this book the author has succeeded in condensing into readable and compact form a mass of interesting and valuable information regarding the methods of administration and organization prevalent in the army. The author does not attempt to cope with the intricacies of army administration in India but confines himself almost entirely to the British Army as administered by the War Office; this fact does not, however, detract from the value of his book to the Indian Army officer, who will find in its pages

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much valuable information which will enable him to improve his knowledge of the usages and administrative methods of the British service, which, it may be remarked, are not altogether similar to those prevailing in India.

Provided that its use is confined to the purpose for which it is intended, namely, to serve as a guide to those reading for promotion and other examinations, this book cannot fail to prove of value to officers of all arms and services. Junior officers, officers of the reserve and laymen, desirous of acquiring a general knowledge of army administration and organization, cannot do better than to commence their studies by a perusal of Major Lindsell's treatise. A word of warning is necessary, perhaps, to those who seek to discover in books of this nature an easy road to knowledge. Such books as this cannot possess more than a transitory value and cannot, in any circumstances, be regarded as authoritative but only as guides and introductions to those official publications with which military officers are required to be conversant.

The book contains a number of excellent diagrams and charts which should prove of material assistance to the reader. The absence of an index may be accounted a fault by some, but the table of contents is so compiled as to render the inclusion of an index superfluous.

The easy style in which the book is written combined with its attractive printing and handy size all conduce to the comfort of the reader.

REGIMENTAL RECORD—35TH SIKHS.

It is hardly to be expected that any human reform, however beneficial, should not result in disappointment and regret to individuals and units. It is generally agreed that the recent reorganization of the Indian Army is bound to result in enhanced efficiency, but no one acquainted with the facts can fail to realise

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and sympathise with the disappointment and regret of those units which, with a fine record of honours won on many a hard-fought field, have now become training battalions. One of these units is the 35th Sikhs, and the record of the services of this fine battalion, which has just been compiled by Col. Freeland, relates in detail, but in most interesting and readable form, its history from 1887, when it was raised, to 1922, when it ceased to be an active battalion.

The 35th Sikhs was one of those units which were not fortunate enough to participate in the Great War, though it sent many drafts to other battalions, and the Roll of Honour and the honours lists bear witness to the fact that these did full credit to their battalion and to the Indian Army. The battalion itself first saw service in Egypt in 1896, and took part in the following year in the fierce fighting at the Malakand and the Mahmund country. From then onward the record is one of constant affrays on the Frontier, concluding with the fighting round Dakka in the Afghan war of 1919.

LA MENTALITE DES ALLEMANDS.

By Georges Blondel, Professor at the French School of Political Science.

In this pamphlet, which only contains some 16 pages, the writer traces the growth of that peculiar German mentality which has existed for nearly a century and by 1914 was so completely developed that it was possible for the rulers of Germany to plunge their country into a gigantic war, the aim of which was the establishment of the world domination of the German Empire. M. Blondel shows how the German people were consistently educated to the idea of the Germans as a chosen race, whose allotted task was to make Germany the pillar of the civilization of the universe. He points out how thoroughly deceived were

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those who praised idealist Germany. One cannot fail to call to mind in this connection that a leading British politician publicly referred to Germany as his "spiritual home" and was only one of many who did not realise that the one object of worship among the German people was the God of Force. The following statement by the Kaiser William II is perhaps more significant than anything else quoted in the pamphlet as indicative of the mentality of the German people:—"I am the instrument of the Most-High, I am his sword, I am his representative. Misfortune to those who resist my will; misfortune and death to those who do not believe in my mission. May all the enemies of the German people perish."

Such an utterance can only be made by a ruler if it will be tolerated by his people and that it could be tolerated proves that that people lacks the intelligence to consider such utterance as idle bombast and the sense of humour to find it supremely ridiculous.

M. Blondel does not sound the Germanophobe note too loudly. He admits that some courageous Germans have recognised that their country is in its present unenviable position through the fault of its late government, and that the people were sedulously crammed with lies and false ideals by their leaders; but he maintains, with some justice, that until the Germans definitely abandon their "deplorable conceptions" civilization will be in peril and the world will not find again that solid peace which it needs.

VOL. VIII OF THE OFFICIAL HISTORY OF AUSTRALIA IN THE WAR OF 1914—1918.

The Australian Flying Corps by F. M. Cutlack.

The first impression of this book is that 459 pages is a liberal allowance in which to tell the story of 4½ flying squadrons and close acquaintance confirms the anticipation that the wealth

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of detail is extraordinary. Every air combat fought by the Australian squadrons is apparently recorded and the causes of success or failure noted, while full accounts are given of a very great number of flights for reconnaissance, "spotting," bombing, or "shooting up" the enemy. In every instance the pilot (and observer where one is carried) is mentioned by name, while a footnote gives each individual's date and place of birth and former profession. It says much for the author's style that this detail does not become wearisome and that the reader's interest is held throughout the 450 pages.

The book is well arranged by theatres of war, and the account given of each of the three widely separated theatres appears to be equally good and accurate. The author is however severe and at times unfair in his criticism of the aircraft material supplied in Mesopotamia, and in the early days in Egypt, and his unduly caustic comments tend to spoil the pleasure of reading the earlier chapters. It is unreasonable for example to gird at an absence of aerial machine guns in Mesopotamia in May 1915, when aircraft were still flying over the lines in France well after that date with a cut-down Lee Enfield as their sole protection. It is unfair also to "grouse" that seaplanes were not provided in Mesopotamia till 4 months after the demand was raised: the time would be good at the present day. A further example of this sort of criticism is the statement that by April 1917, R. E.8's had long replaced the B.E's which were still in use in Egypt: in point of fact the *first* R.E.8. squadron was operating successfully in France no earlier than February-March 1917.

Except for these small blemishes which vanish after the first 50 pages we have nothing but praise for this volume. It does not fail to give credit to British squadrons, while the accounts of the route of the Turkish Armies in Palestine (September 1918) and of the air war in France from the opening of the German offensive in March 1918 to the Armistice should be read by every airman, and by every soldier who wishes to appreciate the value of air co-operation.

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The book contains many interesting and well reproduced photographs, and the printing and general "get up" by an Australian firm is excellent: a particularly good feature, which we would like to see copied in all historical works, is the appearance of the date of the events under description at the top of every page. The maps are fair but should be mounted to unfold outside the printed pages for ease of reference.

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The Journal of the United Service Institution of India



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Reviews.

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United Service Institution of India.

RULES OF MEMBERSHIP.

ALL officers of the Royal Navy, Army, Royal Air Force, Colonial Forces, and of the Auxiliary Force, India, and Gazetted Government Officers shall be entitled to become members without ballot, on payment of the entrance fee and annual subscription.

The Council shall have the power of admitting as honorary members the members of the Diplomatic Corps, foreign naval and military officers, foreigners of distinction, other eminent individuals, and benefactors to the Institution, not otherwise eligible to become members.

Life Members of the Institution shall be admitted on the following terms:—

Rupees 75 + entrance fee (Rs. 10) = Rs. 85.

Ordinary members of the Institution shall be admitted on payment of an entrance fee of Rs. 10 on joining, and an annual subscription of Rs. 10, *to be paid in advance*. The period of subscription commences on 1st January.

Subscribing members of the Royal United Service Institution, Whitehall, London, are not liable for entrance fee while the affiliation rules are in force.

Life members receive the Journal of the Institution post free anywhere, but ordinary members only in India. All members may obtain books from the library on paying V.-P. postage.

Honorary Members shall be entitled to attend the lectures and debates, and to use the premises and Library of the Institution without payment; but should they desire to be supplied with the Journal, an annual payment of Rs. 10, *in advance*, will be required.

Divisional, Brigade and Officers' Libraries, Regimental Messes, Clubs, and other subscribers for the Journal, shall pay Rs. 10 per annum.

Sergeants' Messes and Regimental Libraries, Reading and Recreation Rooms shall be permitted to obtain the Journal on payment of an annual subscription of Rs. 8.

If a member fails to pay his subscription for any financial year (ending 31st December) before the 1st June in the following year, a registered notice shall be sent to him by the Secretary inviting his attention to the fact. If the subscription is not paid by 1st January following his name shall be posted in the Reading Room for six months and then struck off the roll of members.

Members joining the Institution on or after the 1st October, will not be charged subscription on the following 1st January, unless the Journals for the current year have been supplied.

Members are responsible that they keep the Secretary carefully posted in regard to changes of rank and address. Duplicate copies of the Journal will not be supplied free to members when the original has been posted to a member's last known address, and not been returned by the post.

Members or Subscribers to the Journal, intimating a wish to have their Journals posted to any address out of India, shall pay in advance Rupee 1 per annum, to cover foreign postage charges, but Life Members who have left India shall not be liable for foreign postage on Journals.

All communications shall be addressed to the Secretary, United Service Institution of India, Simla.

Contributions to the Journal.

All papers must be written in a clear, legible hand, and only on one side of the paper. All proper names, countries, towns, rivers, etc., must, when in manuscript, be written in capital letters. All plans must have a scale on them.

Contributors are responsible, when they send articles containing any information which they have obtained by virtue of their official positions, that they have complied with the provisions of A. R. I., Vol. II., para. 204, and King's Regulations, para. 509.

Anonymous contributions under a *nom-de-guerre* will not be accepted or acknowledged; all contributions must be sent to the Secretary under the name of the writer and the paper will, if accepted, be published under that name unless a wish is expressed for it to be published under a *nom-de-guerre*. The Executive Committee will decide whether the wish can be complied with.

The Committee reserve to themselves the right of omitting any matter which they consider objectionable. Articles are only accepted on these conditions.

The Committee do not undertake to authorise the publication of such papers as are accepted, in the order in which they may have been received.

Contributors will be supplied with three copies of their paper *gratis*, if published.

Manuscripts of original papers sent for publication in the Journal will not be returned the contributor, unless he expresses a wish to have them back and pays the postage.

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I.—New Members.

The following new members joined the Institution from 2nd December 1923 to 1st March 1924:—

Life Members.

Capt. A. A. E. Chitty.
Capt. E. L. Harrison.
Major A. F. Harper.
Lieut. J. R. Trownsell.
Lieut. A. C. E. West.
Ft.-Lieut. J. L. M. de C. Hughes-Chamberlain.
Lieut. A. D. Brown.
Capt. P. E. C. J. Gwyn.
Capt. R. E. J. Holmes.
Major C. Van R. Reyne.
Capt. J. G. Frith.
Lieut. G. Surtees.
Lieut. G. F. Martin.
Lieut.-Col. J. D. Grant.

Ordinary Members.

Capt. J. M. Hunt.
Capt. G. St. J. Martin.
Lieut.-Col. G. D. Martin.
Lieut. T. H. W. Hight.
Capt. C. A. Cairns.
Lieut.-Col. W. H. Evans.
Capt. O. P. Hamilton.
Capt. F. H. W. Ross-Lewin.
Capt. B. H. Liddell-Hart.
Major H. Greenaway.
Maj.-Genl. O. L. Robinson.
Lieut. Amar Singh.
Lieut. H. W. Mirehouse.
Capt. G. A. Mitchley.
Capt. J. G. Pocock.
Lieut. F. C. Knox.
Capt. C. R. Shallow.
Capt. G. Brunskill.
Capt. J. D. K. Lunnon.
Capt. W. F. M. Sandham.
Major H. E. Connop.
Capt. L. V. Fitz-Patrick.
Capt. E. M. Kock.
Capt. D. S. Gordon-Brown.
Capt. M. B. Allsebrook.
Lieut. A. Whiteside.
Major B. S. Ward.
Capt. A. R. Spurgin.
Capt. H. Misa.
Capt. L. B. Burrows.
Sq. Leader W. B. Hargrave.
Major S. P. Williams.
Capt. C. E. Wauchope.
Capt. C. E. Penny.
Capt. W. St. J. Carpendale.
Major H. N. H. Williamson.
Capt. E. W. S. Sheppard.
Capt. G. P. Crampton.

II.—Examinations.

Books on military history and languages with dictionaries are available in the Library and the following list of books, which is complete in accordance with the War Office List, may be found useful for reference by officers, studying for promotion examinations or entrance to the Staff College.

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MILITARY HISTORY (SPECIAL PERIOD).

1. *The Campaign of the British Army in France and Belgium up to 20th November, 1914.*

A.—OFFICIAL ACCOUNT.

Sir John French's Despatches.

B.—OTHER BOOKS.

40 days in 1914, by General Maurice (new edition).

The Battle of the Marne, by G. H. Perris.

1914, by Viscount French.

General sketch of the European War, by Belloc.

The Great War, by Colonel Sedgwick.

My Memoirs, by Ludendorf.

Falkenhayn's Book.

Von Kluck's Book.

British Campaign in France, Flanders, by Conan Doyle, 1914.

Nelson's History of the War.

Ypres, by German General Staff.

Oxford pamphlets, August 1914. The Coming of the War, by S. Williamson.

Oxford pamphlets, August 1914, Nos. VII and X.

Times Documentary History of the War, Vol. V, Military, Part I.

Times Documentary History of the War, Vol. VIII, Part III.

Der Grosse Krieg Schlacht bei Mons.

Der Grosse Krieg Schlacht bei Longwy.

2. *The Palestine Campaign.*

A.—OFFICIAL ACCOUNT.

A brief record of the advance of the Egyptian Expeditionary Force, 1919.

B.—OTHER BOOKS.

Allenby's Final Triumph, by W. T. Massey.

How Jerusalem was won, by W. T. Massey.

3. *Organisation of Army since* 1868.

A.—ORGANIZATION OF ARMY SINCE 1868.

History of British Army, by Fortescue.

Outline of Development of British Army, by Maj.-Genl. Sir W. H. Anderson.

Our Fighting Services, by Sir Evelyn Wood.

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B.—FORCES OF THE EMPIRE.

The Statesman's Year Book.

Army List.

Articles in Newspapers and Magazines, *viz.*, R. U. S. I.

Army Quarterly, Journal of the U. S. I. of India, etc.

4. *Development and constitution of the British Empire.*

A.—THE BRITISH EMPIRE.

Encyclopædia Britannica—(contains much concentrated information).

The Statesman's Year Book.

Whitaker's Almanack.

The Colonial Office List.

The British Empire and its History, by E. G. Hawke.

The Government of the British Empire, by Jenks, 1918.

The British Empire (6 lectures) by Sir C. P. Lucas, 1918.

The foundation and growth of the British Empire, by J. A. Williamson, 1918.

The beginnings of English Overseas Enterprise, by Sir C. P. Lucas, 1917.

The Government of England, by L. A. Lowell, 1912.

The Expansion of the British Empire, by W. H. Woodward, 1900.

Overseas Britain, by E. F. Knight, 1907.

The origin and growth of the English Colonies and of their system of Government, by H. E. Egerton, 1903.

A short History of Politics, by Jenks, 1900.

The English Constitution, by Bagehot, 1909.

The Expansion of England, by Sir J. Seely, 1883.

Introduction of the study of the law of the Constitution, by A. V. Dicey, 1908.

England in the Seven Years' War, Sir J. Corbett, 1907.

Selected Speeches and Documents on British Colonial Policy, 2 Vols., A. B. Keith, 1918.

B.—BOOKS ON SPECIAL PORTIONS OF THE EMPIRE OR WORLD.

The Rise and Expansion of British Dominions in India, by Sir A. C. Lyall, 1894.

A brief history of the Indian Peoples, by Sir W. H. Hunter, 1907.

The Nearer East, by Hogarth, 1902.

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Modern Egypt, by Cromer, 1908.
The History of Canada, by W. L. Grant.
Nova Scotia, by B. Wilson, 1911.
Report on British North America, by Sir C. P. Lucas.
The Union of South Africa, by R. H. Braud, 1909.
Short History of Australia, by E. Scott.
History of the Australasian Colonies, by Jenks, 1912.
The English in the West Indies, by J. A. Froude, 1888.
The Lost Possessions of England, by W. F. Lord, 1896.

5. *Military Geography.*

Naval and Military Geography of the British Empire, by Dr. Vaughan Cornish, 1916.
Outlines of Military Geography, by Col. A. C. Macdonnel, 1911.
Introduction of Military Geography, by Col. E. S. May.
Imperial Defence, by Col. E. S. May.
Britain and the British Seas, by H. J. Makinder, 1907.
Military Geography, by Macguire.
Imperial Strategy, by Repington.
War and the Empire, by H. Foster.
Historical Geography of British Colonies (Dominions), 7 Vols., by Sir C. P. Lucas, 1906—17.

Vol. 1, Mediterranean.
Vol. 2, West Indies.
Vol. 3, West Africa.
Vol. 4, South Africa.
Vol. 5, Canada.
Vol. 6, Australia.
Vol. 7, India.

The Influence of Sea Power on History, by A. I. Mahan, 1890.
Historical Geography of the British Empire, by Hereford George.
The Mastery of the Pacific, by A. R. Colquhoun, 1902.
Frontiers, by C. B. Fawcett, 1918.

III.—Payment for Articles in the Journals.

Articles accepted for publication in the Journal are paid for, and a sum of approximately Rs. 400 is awarded for articles and reviews published in each Quarterly Journal.

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IV.—Contributions to the Journal.

Articles submitted for publication must be typed in *duplicate*. With reference to Army Regulations, India, Volume II, paragraph 204 and King's Regulations, paragraph 509, action to obtain the sanction of His Excellency the Commander-in-Chief to the publication of any article in the Journal of the United Service Institution of India will be taken by the Committee.

Instructions for the preparation of drawings and plans for reproduction by lithography.

These should be in *jet* black. No washes nor ribands of colour should on any account be used.

If it is absolutely necessary to use colour (and these are only permissible in line work or names) the following will reproduce photographically, *i.e.*:—

Dark red, dark orange, dark green. No other colour should on any account be used.

V.—Library Rules.

1. The Library is only open to members and honorary members of the United Service Institution of India, members are requested to look upon books as not transferable to their friends.

2. No book shall be taken from the Library without making the necessary entry in the register. Members residing permanently or temporarily in Simla are requested to enter their addresses.

3. The United Service Institution of India is open all the year round—including Sundays—from 9 A.M. until sunset. Books may be taken out at any time provided Rule 2 is complied with.

4. A member shall not be allowed, at one time, more than three books or sets of books.

5. Papers, magazines, "works of reference" or books marked "Not to be taken away," or noted as "Confidential" may not be removed.

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6. No particular limit is set as to the number of days for which a member in Simla may keep a book, the Council being desirous of making the library as useful as possible to members; but if after the expiration of a fortnight from date of issue it is required by any other member it will be re-called.

7. Applications for books from members at out-stations are dealt with as early as possible, and books are despatched per Registered V.-P. P. They must be returned carefully packed per Registered Parcel Post within one month of date of issue, or application made for permission to retain them for a further period. This will always be granted unless the book is required by another member.

8. If a book is not returned at the end of four months, it must be paid for without the option of return, if so required by the Executive Committee.

9. Lost and defaced books shall be replaced at the cost of the member to whom they were issued. In the case of lost books which are out of print the value shall be fixed by the Executive Committee, and the amount, when received, spent in the purchase of a new book.

10. The issue of a book under these rules to any member implies the latter's compliance with the rules, and the willingness to have them enforced, if necessary, against him.

11. A list of all books presented and purchased and also a list of books useful to members studying for the Staff College and promotion examinations will be found, under Secretary's Notes, in the quarterly issue of the U. S. I. Journal. Members are invited to note any books which they think might with advantage be procured for the Institution. The suggestions will be placed before the Secretary.

12. Members are invited to contribute presents of books, maps, and photographs of naval and military interest. These may be addressed to the Secretary, U. S. I. of India, Simla. They will be duly acknowledged.

VI.—Library Catalogue.

Under Revision. The new catalogue will be available shortly.

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933.—Gold Medal Prize Essay.

GOLD MEDAL PRIZE ESSAY COMPETITION, 1923-24.

The Council have chosen as the subject for the Gold Medal Essay for 1923-24 the following:—

"THE DEVELOPMENTS WHICH HAVE TAKEN PLACE IN THE ARMY HAVE GREATLY INCREASED THE WORK INVOLVED IN ITS ADMINISTRATION: IN WHAT DIRECTIONS CAN THIS ADMINISTRATION WORK BE SIMPLIFIED, AND REDUCED TO A MINIMUM, ESPECIALLY FROM A REGIMENTAL STANDPOINT, WITH A VIEW TO GIVING GREATER OPPORTUNITY FOR IMPROVING THE EFFICIENCY OF THE ARMY IN ITS TRAINING FOR WAR."

The following are the conditions of the competition:—

(1) The competition is open to all gazetted officers of the Civil Administration, the Royal Navy, Army, and Royal Air Force or Auxiliary Force who are members of the U. S. I. of India.

(2) Essays must be printed or type-written and submitted in *triplicate*.

(3) When a reference is made to any work, the title of such work is to be quoted.

(4) Essays are to be *strictly anonymous*. Each must have a motto, and enclosed with the essay, there should be sent a *sealed* envelope with the motto written on the outside and the name of the competitor inside.

(5) Essays will not be accepted unless received by the Secretary on or before the 30th June 1924.

(6) Essays will be submitted for adjudication to 3 judges chosen by the Council. When the decisions of the 3 judges are received the Committee will submit the four essays, placed first in order by the judges, with their recommendations on the award of the Gold Medal to the Council, who will decide whether the Medal is to be awarded and whether the essay be published.

(7) The name of the successful candidate will be announced at a Council Meeting to be held in September or October 1924.

(8) All essays submitted are to become the property of the United Service Institution of India, *absolutely* and authors will not be at liberty to make any use whatsoever of their essays without the sanction of the Council.

(9) Essays should not exceed about 15 pages of the size and style of the Journal exclusive of any appendices, tables or maps.

By order of the Council,

SIMLA: *27th August 1923.*

H. G. MARTIN, MAJOR, R.A.,
Secretary, U. S. I. of India.

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VIII.—Army List pages.

The U. S. I. is prepared to supply members and units with manuscript or type-written copies of Indian Army List pages, at the following rate :—

Type-written, per page, Rs. 2.

IX.—List of books purchased.

BOOKS PURCHASED.

Title.	*Author.*
The Genesis of the War ...	Asquith.
Deutschlands Krieg in der Luft ...	Hœpnerr.
L'Aeronautique	Ortlieb.
History of 24th Squardon	Illingworth.
„ „ 60th „ R.A.F. ...	Scott.
„ „ 99th „	Pattinson.
Air Raid Damage in London ...	Monson.
Reflexions Sur L'art de la Guerre ...	Serrigny.
World Crisis (Vol. 2)	Churchill.
German Strategy in the Great War ...	Neame.
Stray Recollections (2 Vols.) ...	Callwell.
Tales of Travel	Curzon.
Wild Animals in Central India ...	Brander.
Indian Forest Insects	Stebbing.
Fauna of British India ("Birds" Vol. I)	Stuart Baker.
An Outline of the Egyptian and Palestine Campaigns.	Bowman-Manifold.
Manual of Elementary Forest Zoology for India.	Stebbing.

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Title.	*Author.*
Defence of London, 1915—1918 ...	A. Rawlinson.
Report on the National and Imperial Defence, 1924.	"Official".
Whitaker's Almanac, 1924 ...	J. Whitaker.
The Senior Geography	A. J. Herbertson and F. D. Herbertson.

Books Presented.

Title.	*Published.*	*Author.*
Official History of Australia in the War 1914—18, "Australian Flying Corps," Vol. VIII. and	1923	F. M. Cuttack.
Official History of Australia in the War 1914—18, Vol. XII, photographic Record of the War.	1923	Bean and Gullett.
(Presented by the publishers Angus and Robertson, Sydney).		
Guide to a First Class and Special Certificates (English) (Presented by Gale and Polden, Aldershot).		"F. P. R."
General Frederick Young (Presented by the author).		L. H. Jenkins.
Indian Historical Records Commission Proceedings of Meetings, Vol. 5 (Presented by the Punjab Government).	1923	"Official"
"Jutland" A Plea for a Naval General Staff and		A. C. B. Alexander.
"Some Pitfalls of Army Accounts" (Presented by Hugh Rees, London).		G. L. Parker.

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Books Presented.

Title.	*Published.*	*Author.*
Speeches by Lord Chelmsford 1916—21,2 Vols. (Presented yb Government of India).		
Elementary Imperial Geography and	1924	Capt. D. H. Cole.
Army Organisation and Administration (Presented by Messrs. Sifton Praed and Co., London).	1924	By "An Officer of the Line."
The Friends of England ... and	1923	Genl. Sir Ian Hamilton.
"Flying" ... (Presented by the publishers, George Allen and Unwin, London).	1923	Maj. W. T. Blake.
Military Law made Easy, 13th Edn. (Presented by Messrs. Gale and Polden).	1924	Lt.-Col. S. T. Banning.
Elementary Nautical Science (Presented by Oxford University Press, Bombay).	1923	Hart and Laidler.
"Garhwalis" (Presented by Government of India).	1924	Capt. J. A. Evatt.
Report of Examination for Promotion (6 copies presented by War Office).	1923	"Official."
Life of Admiral of the Fleet Sir A. K. Wilson (Presented by E. M. S. Steward).	1923	Admiral Sir E. Bradford.
Annual Report of the Smithsonian Institution, 1920-21 (Presented by the Secretary Smithsonian Institution, Washington).		Various.

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Books Presented.

Title.	*Published*	*Author.*
The Army in India and its Evolution (Presented by Government of India).	1924	"Official."
National Advisory Committee for Aeronautics report No. 160, "An Airship Slide Rule." (Presented by Washington Government).	1923	E. R. Weaver and S F. Pickering.

Books on Order.

Title.		*Author.*
The Art of Writing English	...	Quiller Couch.
Shackleton's Last Voyage	...	F. Wild.
Life of Lord Morley	...	S. S. Ali Khan.
Instruction provisoire surles exercices et de manouveres de la Cavalerie.		

X.—Schemes.

One scheme (Lieutenants for promotion to Captain) is available for issue. Price Rs. 5 per copy with map.

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United Service Institution of India.

Prize Essay Gold Medalists.

(With rank of Officers at the date of the Essay.)

1872..Roberts, Lieut-Col. F. S., v.c., c.b., r.a.
1873..Colquhoun, Capt. J. S., r.a.
1874..Colquhoun, Capt. J. S., r.a.
1879..St. John, Maj. O. B. C., r.e.
1880..Barrow, Lieut. E. G., 7th Bengal Infantry.
1882..Mason, Lieut. A. H., r.e.
1883..Collen, Maj. E. H. H., s.c.
1884..Barrow, Capt. E. G., 7th Bengal Infantry.
1887..Yate, Lieut. A. C., 27th Baluch Infantry.
1888..Maude, Capt. F. N., r.e.
Young, Maj. G. F., 24th Punjab Infantry (specially awarded a silver medal).
1889..Duff, Capt. B., 9th Bengal Infantry.
1890..Maguire, Capt. C. M., 2nd Cav., Hyderabad Contingent.
1891..Gaunter, Lieut. F. G., 10th Bengal Lancers.

1905..Cockerill, Maj. G. K., Royal [illegible]
1907..Wood, Maj. E. G. M., 99th Deccan Infantry.
1908. Jeudwine, Maj. H. S., r.a.
1909..Molyneux, Maj. E. M. J., d.s.o., 12th Cavalry.
Elsmie, Maj. A. M. S., 56th Rifles, F. F. (specially awarded a silver medal).
1911..Mr. D. Petrie, m.a., Punjab Police.
1912..Carter, Maj. B. C., The King's Regiment.
1913..Thomson, Maj. A. G., 58th Vaughan's Rifles (F.F.).
1914. Bainbridge, Lieut.-Col. W. F., d.s.o., 51st Sikhs (F.F.).
Norman, Maj. C. L., m.v.o., q.v.o., Corps of Guides (specially awarded a silver medal).
1915..No Award.
1916..Crum, Maj. W. E., v.d., Calcutta Light Horse.
1917..Blaker, Maj. W. F., r.f.a.
1918..Gompertz, Capt. A. V., m.c., r.e.
1919..Gompertz, Capt. M. L. A., 108th Infantry.
1920..Keen, Lt.-Col. F. S., d.s.o., 2/15th Sikhs.
1921..No Award.
1922..Martin, Maj. H. G., d.s.o., o.b.e., r.f.a.
1923..Keen, Colonel F. S., d.s.o., i.a.

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Books Presented.

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The Army in India and its Evolution (Presented by Government of India).	1924	"Official."
National Advisory Committee for Aeronautics report No. 160, "An Airship Slide Rule." (Presented by Washington Government).	1923	E. R. Weaver and S F. Pickering.

Books on Order.

Title.	Author.

The Institution was recently asked to supply all issues of the Journal from August 1914 to the Australian War Museum, Melbourne, Australia, and all Journals have been supplied with the exception of the issue for July 1920.

The Council of the Institution would be very grateful, therefore, if any member could supply the copy for July 1920, in order that the collection may be completed.

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United Service Institution of India.

Prize Essay Gold Medalists.

(With rank of Officers at the date of the Essay.)

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1873..Colquhoun, Capt. J. S., R.A.
1874..Colquhoun, Capt. J. S., R.A.
1879..St. John, Maj. O. B. C., R.E.
1880..Barrow, Lieut. E. G., 7th Bengal Infantry.
1882..Mason, Lieut. A. H., R.E.
1883..Collen, Maj. E. H. H., S.C.
1884..Barrow, Capt. E. G., 7th Bengal Infantry.
1887..Yate, Lieut. A. C., 27th Baluch Infantry.
1888..Maude, Capt. F. N., R.E.
Young, Maj. G. F., 24th Punjab Infantry (specially awarded a silver medal).
1889..Duff, Capt. B., 9th Bengal Infantry.
1890..Maguire, Capt. C. M., 2nd Cav., Hyderabad Contingent.
1891..Cardew, Lieut. F. G., 10th Bengal Lancers.
1893..Bullock, Maj. G. M., Devonshire Regiment.
1894..Carter, Capt. F. C., Northumberland Fusiliers.
1895..Neville, Lieut.-Col. J. P. C., 14th Bengal Lancers.
1896..Bingley, Capt. A. H., 7th Bengal Infantry.
1897..Napier, Capt. G. S. F., Oxfordshire Light Infantry.
1898..Mullaly, Maj. H., R.E.
Clay, Capt. C. H., 43rd Gurkha Rifles (specially awarded a silver medal).
1899..Neville, Col. J. P. C., S.C.
1900..Thuillier, Capt. H. F., R.E.
Lubbock, Capt. G., R.E. (specially awarded a silver medal).
1901..Hanken, Lieut.-Col. G. P. P., 46th Punjab Infantry.
1902 Turner, Capt. H. H. F., 2nd Bengal Lancers.
1903..Hamilton, Maj. W. G., D.S.O., Norfolk Regiment.
Bond, Capt. R. F. G., R.E. (specially awarded a silver medal).
1904..Macmunn, Maj. G. F., D.S.O., R.F.A.
1905..Cockerill, Maj. G. K., Royal Warwickshire Regiment.
1907..Wood, Maj. E. G. M., 99th Deccan Infantry.
1908. Jeudwine, Maj. H. S., R.A.
1909..Molyneux, Maj. E. M. J., D.S.O., 12th Cavalry.
Elsmie, Maj. A. M. S., 56th Rifles, F. F. (specially awarded a silver medal).
1911..Mr. D. Petrie, M.A., Punjab Police.
1912..Carter, Maj. B. C., The King's Regiment.
1913..Thomson, Maj. A. G., 58th Vaughan's Rifles (F.F.).
1914. Bainbridge, Lieut.-Col. W. F., D.S.O., 51st Sikhs (F.F.).
Norman, Maj. C. L., M.V.O., Q.V.O., Corps of Guides (specially awarded a silver medal).
1915..No Award.
1916..Crum, Maj. W. E., V.D., Calcutta Light Horse.
1917..Blaker, Maj. W. F., R.F.A.
1918..Gompertz, Capt. A. V., M.C., R.E.
1919..Gompertz, Capt. M. L. A., 108th Infantry.
1920..Keen, Lt.-Col. F. S., D.S.O., 2/15th Sikhs.
1921..No Award.
1922..Martin, Maj. H. G., D.S.O., O.B.E., R.F.A.
1923..Keen, Colonel F. S., D.S.O., I.A.

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MacGREGOR MEMORIAL MEDALS.

1. The MacGregor Memorial Medal was founded in 1888 as a memorial to the late Major-General Sir Charles MacGregor. The medals are awarded for the best military reconnaissances or journeys of exploration of the year.

2. The following awards are made annually in the month of June:—

(*a*) For officers—British or Indian—silver medal.

(*b*) For soldiers—British or Indian—silver medal, with Rs. 100 gratuity.

3. For specially valuable work a gold medal may be awarded in place of one of the silver medals, or in addition to the silver medals, whenever the administrators of the fund deem it desirable. Also the Council may award a special additional silver medal, without gratuity, to a soldier, for special good work.

4. The award of medals is made by His Excellency the Commander-in-Chief as Vice-Patron, and the Council of the United Service Institution who were appointed administrators of the Fund by the MacGregor Memorial Committee.

5. Only officers and soldiers belonging to the Army in India (including those in civil employ) are eligible for the award of the medal.*

6. The medal may be worn in uniform by Indian soldiers on ceremonial parades, suspended round the neck by the ribbon issued with the medal.

Note.

(*i*) Personal risk to life during the reconnaissance or exploration is not a necessary qualification for the award of the medal; but in the event of two journeys being of equal value, the man who has run the greater risk will be considered to have the greater claim to the reward.

(*ii*) When the work of the year has either not been of sufficient value or has been received too late for consideration before the Council Meeting, the medal may be awarded for any reconnaissance during previous years considered by His Excellency the Commander-in-Chief to deserve it.

MacGregor Memorial Medalists.

(With rank of officers at the date of the Award.)

1889..Bell, Col. M. S., V.C., R.E. (specially awarded a gold medal).

1890..Younghusband, Capt. F. E., King's Dragoon Guards.

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* *N.B.*—The terms "officer" and "soldier" include those serving in the British and Indian armies and their reserves, also those serving in Auxiliary Forces, such as the Volunteers and Corps under Local Governments, Frontier Militia, Levies and Military Police, also all ranks serving in the Imperial Service Troops.

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MacGregor Memorial Medalists—*(contd.)*.

1891..Sawyer, Major H. A., 45th Sikhs.
Ramzan Khan, Havildar, 3rd Sikhs.

1892..Vaughan, Capt. H. B., 7th Bengal Infantry.
Jaggat Singh, Havildar, 19th Punjab Infantry.

1893..Bower, Capt. H., 17th Bengal Cavalry (specially awarded a gold medal).
Fazaldad Khan, Dafedar, 17th Bengal Cavalry.

1894..O'Sullivan, Major G. H. W., R.E.
Mull Singh, Sowar, 6th Bengal Cavalry.

1895..Davies, Capt. H. R., Oxfordshire Light Infantry.
Ganga Dyal Singh, Havildar, 2nd Rajputs.

1896..Cockerill, Lieut. G. K., 28th Punjab Infantry.
Ghulam Nabi, Sepoy, Q. O. Corps of Guides.

1897..Swayne, Capt. E. J. F., 10th Rajput Infantry.
Shahzad Mir, Dafedar, 11th Bengal Lancers.

1898..Walker, Capt. H. B., Duke of Cornwall's Light Infantry.
Adam Khan, Havildar, Q. O. Corps of Guides.

1899..Douglas, Capt. J. A., 2nd Bengal Lancers.
Mihr Din, Naik, Bengal Sappers and Miners.

1900..Wingate, Capt. A. W. S., 14th Bengal Lancers.
Gurdit Singh, Havildar, 45th Sikhs.

1901..Burton, Maj. E. B., 17th Bengal Lancers.
Sundar Singh, Colour Havildar, 31st Burma Infantry.

1902..Ray, Capt. M. R. E., 7th Rajput Infantry.
Tilbir Bhandari, Havildar, 9th Gurkha Rifles.

1903..Manifold, Lieut.-Col. C. C., I.M.S.
Ghulam Hussain, Lance-Dafedar, Q. O. Corps of Guides.

1904..Fraser, Capt. L. D., R.G.A.
Moghal Baz, Dafedar, Q. O. Corps of Guides.

1905..Rennick, Maj. F., 40th Pathans (specially awarded gold medal).
Madho Ram, Havildar, 8th Gurkha Rifles.

1906..Shahzada Ahmad Mir, Risaldar, 36th Jacob's Horse.
Ghafur Shah, Lance-Naik, Q. O. Corps of Guides Infantry.

1907..Nangle, Capt. M. C., 92nd Punjabis.
Sheikh Usman, Havildar, 103rd Mahratta Light Infantry.

1908..Gibbon, Capt. C. M., Royal Irish Fusiliers.
Malang, Havildar, 56th Punjab Rifles.

1909..Muhammad Raza, Havildar, 106th Pioneers.

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MacGregor Memorial Medalists—(*concld*).

1910..Sykes, Maj. M., G.M.G., late 2nd Dragoon Guards (specially awarded a gold medal).

Turner, Capt. F. G., R.E.

Khan Bahadur Sher Jung, Survey of India.

1911..Leachman, Capt. G. E., The Royal Sussex Regiment.

Gurmukh Singh, Jemadar, 93rd Burma Infantry.

1912..Pritchard, Capt. P. P. A., 83rd Wallahjabad Light Infantry (specially awarded a gold medal).

Wilson, Lieut. A. T., C.M.G., 32nd Sikh Pioneers.

Mohibulla, Lance-Dafedar, Q. V. O. Corps of Guides.

1913..Abbay, Capt. B. N., 27th Light Cavalry.

Sirdar Khan, Sowar, 39th (K.G.O.) Central India Horse.

Wabatong, Havildar, Burma Military Police (specially awarded a silver medal).

1914..Bailey, Capt. F. M., I.A., (Political Department).

Morshead, Capt. H. T., R.E.

Haidar Ali, Naik, 106th Hazara Pioneers.

1915..Waterfield, Capt. F. C., 45th Rattay's Sikhs.

Ali Juma, Havildar, 106th Hazara Pioneers.

1916..Abdur Rahman, Naik, 21st Punjabis.

Zarghun Shah, Havildar, 58th Rifles (F. F.) (specially awarded a silver medal).

1917..Mian Afraz Gul, Sepoy, Khyber Rifles.

1918..Noel, Capt. E. W. C. (Political Department).

1919..Keeling, Lt.-Col. E. H., M.C., R.E.

Alla Sa, Jemadar, N.-E. Frontier Corps.

1920..Blacker, Capt. L. V. S., Q. V. O. Corps of Guides.

Awal Nur, C. Qm. Havildar, 2nd Bn., Q. V. O. Corps of Guides. (Special gratuity of Rs. 200.)

1921..Holt, Major A. L., Royal Engineers.

Sher Ali, Sepoy No. 4952, 106th Hazara Pioneers.

1922..Abdul Samad Shah, Capt., O.B.E., 31st D. C. O. Lancers.

Nur Muhammed, Lance-Naik, 1st Guides Infantry, F. F.

1923..Bruce, Capt. J. G., 2/6th Gurkha Rifles.

Sohbat, Head Constable, N.-W. F. Police.

Hari Singh Thapa, Survey Department.

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The Journal

OF THE

United Service Institution of India.

Vol. LIV APRIL, 1924 No. 235.

THE FIRST PHASE OF GENERAL MAUDE'S CAMPAIGN IN MESOPOTAMIA—(AUGUST 1916 TO FEBRUARY 1917).

(A lecture given to the officers of the Sialkot Brigade Area on the, 6th June 1923, by Capt. J. E. Shearer, 2/15th Punjab Regt.).

General Maude brought the 13th (Kitchener's) Division, which he had commanded in Gallipoli, to Mesopotamia in March 1916, and remained in command of that Division until he was appointed Force Commander in August 1916.

When Kut fell at the end of April 1916, the Turks were holding a line on the left bank of the Tigris at Sannayat; but they had been pushed back some six miles further up stream to Sinn on the right bank.

As soon, however, as the Turks had sent their prisoners and captured material safely up stream from Kut, they quietly evacuated the whole of the right bank as far back as the Hai. We followed the Turks up as soon as their retirement became known, but our casualties from thirst and heatstroke during that short advance were so amazingly heavy that further active operations were obviously out of the question until after the end of the hot weather. The temperature in E. P. tents had by that time, the end of May, reached the region of 130° F. The Turks were obviously feeling the heat just as much as we were ourselves, so a period of stagnation settled down on the theatre of operations. The river, the only source of water-supply for both sides, became

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"no man's land" and picquets and snipers were extended along both banks. It consequently became impossible for either side to draw water by daylight. On the right bank the Turks dug in on the line Mahommed Abdul Hassan-Bessouia-Atab, while we consolidated the line Magasis-Dujailah Depression-Turk's Ridge (a range of hillocks only some 10 feet high) Dujailah Redoubt.

Both sides were still in the above-mentioned positions when General Maude assumed command of the Force. The position was a most unusual one, for the Turkish Line on the left bank of the Tigris was some fifteen miles in advance of their line on the right bank.

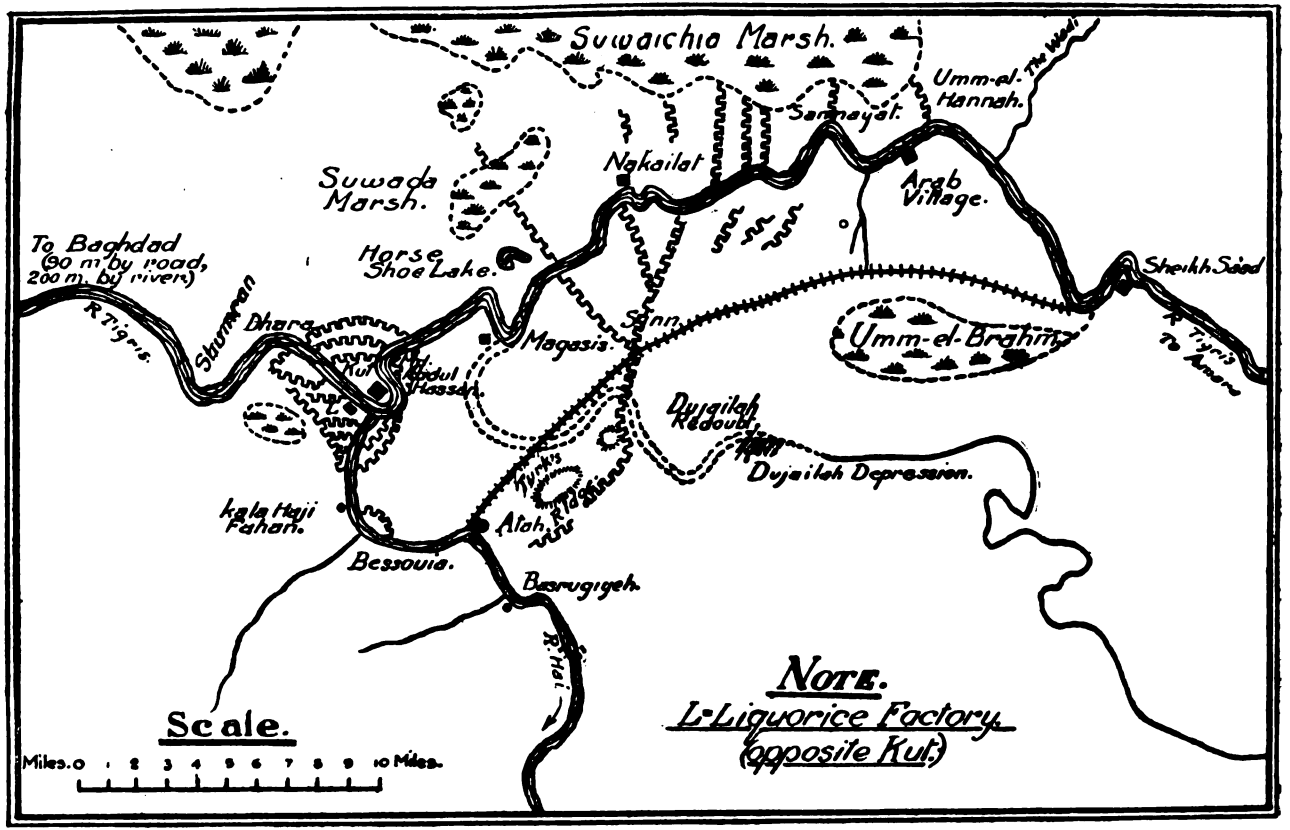
A successful offensive was urgently required to retrieve the reputation of the British, which had suffered appreciably in the eyes of the Eastern World as the result of the fall of Kut-el-Amara in the previous spring. To carry this out, however, any circling movement round the North of the Suwaichia marsh was obviously out of the question on account of lack of water, as the water of that marsh was quite undrinkable through being thoroughly impregnated with "Epsom salts."

Consequently, three courses were open to General Maude in making up his mind as to how he would carry out the necessary offensive.

The first was a direct attack at Sannayat. Our three unsuccessful attempts to capture that position in the previous April had proved how costly any further attempt there would be, for the position was in a defile and could only be attacked frontally. It is true that we could enfilade the whole position from the opposite bank of the Tigris; but the Turks invariably dug like moles in the soft ground of Mesopotamia. Their trenches were 7 feet deep and only 2 to 2½ feet wide, while continuous communication trenches stretched behind their lines for amazing distances. Added to this, observation was extremely difficult both on account of mirage and on account of the absolutely featureness flatness of the ground. We had no howitzers heavy enough to dig the Turks out of their deep, narrow trenches so they were in a position to ignore the enfilade fire of our light guns and howitzers. Consequently, General Maude did not choose this plan.

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KUT -EL- AMARA & SHEIKH SA'AD.



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The second was to hold the Turks on the Hai while the bulk of the British force crossed the Tigris between Magasis and Nakailat. If this crossing could have been carried out with sufficient suddenness and in sufficient force, the Turks at Sannayat would have been cut off and captured; but it is highly improbable that this plan would have succeeded. The river-line was too well watched by the Turks to allow extensive preparations to be carried out unnoticed. A large Turkish reserve was, moreover, posted in the region of the Horse Shoe Lake. This reserve would most certainly have gained sufficient time for the Sannayat garrison to escape north of the Suwada Marsh. The successful carrying out of this plan would have eased the supply situation on the right bank by levelling up our positions on both banks; but it would have considerably increased the length of our line on the left bank, and so reduced the number of units available for an offensive. This plan would, therefore, not have been a sound one.

The third course open to General Maude was to hold the Turks at Sannayat with a minimum force while a maximum force attacked on the right bank with the object of stretching the Turkish cordon on the left bank to breaking point. The maximum force would then be thrown across the Tigris behind the bulk of the Turkish Army and cut their Lines of Communications. This was the plan which promised the best results, and was the one adopted by General Maude.

It is true that, while we were cutting the enemy's Lines of Communication they might have followed suit and cut our own communications; but, as Hamley points out, history has amply proved that the side whose communications are most directly threatened invariably tries to manœuvre out of such a situation. If the worst came to the worst, we could have organised an alternative line of supply from Nasariyeh up the Hai. The Turks had no possible alternative line of supply, and so would have been in the more perilous situation of the two. Consequently the presence of the 7th Division at Sannayat, supported by the 3rd Division on the opposite bank of the Tigris, was quite sufficient to prevent the Turks from attempting to cross behind our 3rd corps while it was attacking on the Hai.

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The placing of our 3rd corps across the Hai also made it impossible for the Turks on the Tigris to assist any offensive down the Euphrates on Nasariyeh. Whether the Turks seriously contemplated any such offensive it is difficult to say but rumours with regard to it were very frequent in the force at that time.

The next consideration was how soon the offensive could be commenced. Our casualties from thirst and heatstroke during our advance to Magasis and Dujailah on the 20th of May had clearly proved the futility of attempting any further active operations before the end of September, while heavy rain and floods might be expected during January, February and March. The whole theatre of operations consisted of the dry mud of a river delta which rain very quickly converted into a sea of liquid mud in which guns and wheeled transport were quite immobilised. Consequently, the only months on which General Maude could count with any certainty as suitable for his offensive were October to December and April.

General Maude had the strength of mind, however, not to move until the 13th December, by which time the force had been re-equipped, trained and brought up to strength, and really made ready in every respect. By that time also sufficient river and land transport had been organised to maintain the efficiency of the force during the offensive.

Shortly before General Maude assumed command of the force, the Tigris Corps had been reorganised into two army corps, the 1st and 3rd and one cavalry division. The 1st corps comprised the 3rd (Lahore) and the 7th (Meerut) Divisions, while the 3rd corps comprised General Maude's old Division, the 13th (Kitchener's) and the 14th (Indian) Division. The Cavalry Division consisted of the 6th and 7th Cavalry Brigades.

The force was not, however, nearly as formidable as the above list of formations would lead one to expect, as heat, disease and hardship had reduced its strength very considerably. Throughout the hot weather the supply situation was difficult in the extreme. The 13th Division had been withdrawn to Amara and the Cavalry Division to Arab Village, thus considerably relieving the strain on both river and land transport. The 7th Division

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remained at Sannayat and so could also be supplied almost entirely by river transport; but it must have been very difficult to supply the 3rd Division, which was spread along the right bank between Sannayat and Sinn, while the 14th Division, in and beyond Sinn, suffered very great hardships.

The water-supply of the 14th Division had been secured by digging in a sand-bagged pumping station on the river bank at Magasis and by sinking wells in the Dujailah Depression. Supplies of dried food were sufficient; but fresh vegetables were unobtainable. Even potatoes went bad before they reached the more advanced positions. The inevitable result was that scurvy broke out and decimated the Division. At one time my own battalion was the strongest in the Brigade with 180 effective rifles, while even the majority of those effectives were suffering slightly from scurvy. Ordnance stores and drafts were steadily filtering through to us all the time; but not in sufficient quantities. When it is realised, however, that every single article of supply, even down to firewood, had to be shipped from India, it makes one marvel how the small amount of transport available in the country could maintain the force at all in its scattered positions so far from its base.

The publication of the Mesopotamia Commission's report had strengthened General Maude's hand to an extent never enjoyed by any previous commander of Force "D"; and he appeared to take full advantage of his strong position, as, towards the end of the hot weather, we began to notice an appreciable increase in the quantities of supplies of every kind. We were issued with Lewis guns, a weapon we had never seen before, while Mills bombs, boots, clothing and equipment commenced to arrive in sufficient quantities. Large drafts also brought us up to strength, thus giving us an opportunity of training for the offensive which we knew would commence very soon.

Our air service also was renovated and regained the mastery of the air which had been wrested from it after the fall of Kut-el-Amara. At the beginning of the hot weather out airmen had been full of bitter complaints with regard to the quality of their machines, which they said had all been badly strained by carrying provisions for General Townshend's force in Kut.

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A light railway (2' 6" gauge) was built from the advanced base at Sheikh Saad and straight across the desert to Sinn. A metre gauge railway had also been built from Basra to Amara, thus easing the block in "the Norrows," a most difficult part of the river to navigate, while another metre gauge railway had been built up the Euphrates to Nasariyeh.

River transport was also greatly increased. In December 1915, when Kut was first besieged, river steamers of every discription had been hurriedly collected in India, Burma, Egypt and elsewhere and sent to Basrah; but the majority of these sank *en route*. The few ships which had reached the Tigris were insufficient to cope with the requirements of the Relief Force and so must have failed to maintain General Maude's larger force. But by December 1916 the original fleet had been augmented by the addition of a very large number of spacious river steamers which had been specially designed for work on the Tigris. Some of these had been built in Glasgow, and had come out under their own steam, others had been sent out in sections and assembled in Basrah.

Few of us in the striking force realised the magnitude of the task which General Maude and his "Q" Staff had performed in a few months, although we very much appreciated the resulting marked increase in supplies of every description. It was not until I was evacuated wounded to Basrah in March 1917, that I realised what immense changes had taken place in a little over a year. In January 1916, when I had first arrived at Basrah, our ship had tied up at a small wooden jetty among the palm groves above the town. This was the only spot where ocean-going steamers could come alongside at all, so a line of steamers discharging their cargo into small Arab boats, stretched for miles down stream. In April 1917, I was amazed to see mile upon mile of modern docks and wharves at which steam cranes were unloading ocean-going ships, and large river-steamers were being built and repaired. The palm groves in which the Kut Relief Force had disembarked in January 1916, had all disappeared, and in their stead were busy railway sidings which stretched in every direction almost as far as the eye could see.

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As a result of all the above improvements the force which advanced on the 13th of December 1916 was infinitely more complete in every respect than the hastily collected Kut Relief Force which assembled at Ali al-Gharbi in January 1916. The "moral" of both forces was equally high, but in the former case we could not help feeling that our men's lives were being unnecessarily sacrificed through undue haste and lack of proper supply arrangements; while in the latter case we had a feeling of absolute confidence in our commander; we felt that his whole plan and organisation was of the first order and consequently suffered quite as heavy casualties without feeling in the least depressed.

The utmost secrecy was maintained as to the actual objective of the offensive. Early in December the 13th Division was moved to Sheikh Saad, and officer's patrols from the 14th Division went out night after night systematically to reconnoitre the Turkish outpost line from Mahomed Abdul Hassan to Atab. I had been on patrol for a week, out all night and lying up in a nullah all day, reconnoitring a somewhat large sector which included Bessouia and Atab. But the plan of the intended operations was kept so secret that even those of us who were making the preliminary reconnaissances had not the slightest idea when or where General Maude intended to cross the Hai.

On the 13th of December I received orders to report at Imam-al-Mansur. I arrived there at dusk, and to my amazement found the whole of the 13th Division and the Cavalry Division pouring in. I was lucky enough to have been given the task of guiding the 13th Division to various positions round Atab. We carried out an approach march in the dark arriving in position at dawn, only to find that the Turkish outposts had slipped away during the night.

The advance obviously came as an absolute surprise to the Turks as they allowed the Cavalry Division to cross the Hai at Basrugiyeh and the 13th Division at Atab without opposition in either case. The Turkish outposts in the Mahomed Abdul Hassan area were, apparently, becoming anxious before the advance; but in the Atab region they appeared to be quite unsuspecting that anything important was likely to happen so far to the flank.

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As soon as the Cavalry had crossed the Hai, they swept its western bank as far as Kala Haji Fahan. They were then relieved by the 13th Division and moved far out to the flank in the direction of Shumran.

The next day the 13th Division moved astride the Hai to within 600 yards of the main Hai-Bridgehead position and dug in. The 14th Division also crossed and extended the line towards Shumran. A period of trench warfare then set in while General Maude was preparing the next step of his careful, methodical advance. Matters were further delayed by heavy rain in Christmas week. This turned the whole country-side into a marsh and immobilised guns and transport for several days.

On the 14th December the 3rd Division advanced westwards from Magasis. This division drove in a wedge between the two Turkish positions at Mahomed Abdul Hassan and the Hai-Bridgehead, and gradually extended their hold northwards. By the 9th of January the Turks had been pushed back to their main trench system in the Khadairi Bend. That morning, the decisive attack was commenced in a thick mist and the enemy's first line was captured. Many parties of our men were overwhelmed in the mist by Turkish counter-attacks, which were repeatedly pushed home with the utmost determination, and could not be seen until they were very close at hand; but the captured trenches were retained in spite of all the enemy's efforts to dislodge the 3rd Division.

General Maude had arranged diversions at Hai-Bridgehead and Shumran to prevent the Turks from sending reinforcements to Mahomed Abdul Hassan; but the thick mist which so greatly assisted the Turkish counter-attacks in the Khadari Bend, also unfortunately rendered these demonstrations ineffective.

Then followed ten days of continuous fighting as the Turks made a determined resistance and disputed every yard of ground. The 3rd Division were far from being in a pleasant situation as they were enfiladed from both flanks by Turkish Guns across the Tigris; but determination, combined with the steady methodical application of the principle of the limited objective was ultimately

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successful. On the 18th of January the remnants of the defenders made a stand in their last redoubts in the point of the bend, and escaped across the river that night.

As soon as the line of the Hai had been gained, railhead was extended to Atab and preparations made for the main attack on the Hai-Bridgehead position. On the morning of the 25th of January the 13th Division attacked astride the Hai with the 38th and 39th Brigades on the west bank, and the 40th Brigade on the east. The objective in each case was the enemy's front line only. The 40th Brigade were entirely successful in their attack; but the 39th Brigade did not fare so well. They gained their objective with very little loss, but were counter-attacked and forced to relinquish it with heavy casualties. They again attacked and captured their objective. The most bitter struggle raged for several hours. The mistake had apparently been made of pushing reinforcements straight in instead of on the flanks. The result was that our men were too crowded to handle their arms properly in the captured trench. The supply of bombs gave out. The Turks, who were making most determined bombing attacks on both flanks, and down all communication trenches gained the upper hand and finally re-captured the trench. The carnage caused by bombs exploding in that tightly packed trench can be easily imagined.

In the early afternoon the 36th Brigade took over the trenches which had been occupied by the 38th and 39th Brigades before the attack, while the two latter Brigades moved back to Corps Reserve. That night the 14th Division took over the whole western bank of the Hai.

Next morning (26th January) two battalions of the 36th Brigade, the 26th and 82nd Punjabis, captured and held the enemy trench which the 39th Brigade had failed to keep the day before. The struggle was just as bitter as that of the previous day; but a diversion was caused by the two left companies of the 26th Punjabis going slightly farther to the left than was intended. The enemy's front line was so sharply refused at that point that it was almost paralled to our line of advance. Consequently our slight deviation to the left made us over-shoot our objective by a considerable distance. While we were in the enemy's barrage the dust

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was so thick that it was impossible to see more than a few yards. This prevented us from seeing our objective at all, although we only missed it by a few yards. After an advance of 1,500 yards, however we saw and captured a part of the enemy's curtain trench 1,000 yards beyond the flank of the remainder of our battalion. The position was most uncomfortably isolated but its tactical value was obvious, as from it we were able to enfilade all Turkish counter-attacks against the 82nd Punjabis and the remainder of our own battalion. We had a very hard fight to maintain ourselves in our isolated flank position, but succeeded in doing so for four hours, after which time we were ordered to rejoin the rest of our battalion. My company, which was one of the two in question, lost 75 per cent of its effectives, but we had the satisfaction of seeing repeated Turkish counter-attacks break down at their very inception under our enfilade fire and of feeling that the retention of our flank position was probably a deciding factor in the battle. By the evening our Brigade had satisfactorily consolidated the captured position and the Turks gave up the struggle.

Next morning the two other battalions of the 36th Brigade took over the next two trenches with comparatively little opposition. Then followed a few days of calm while both sides were preparing for the next attack.

On the 1st of February the 37th Brigade attacked on the west bank, the 13th Division on the east bank of the Hai. The 13th Division was entirely successful and captured the whole of the angle between the eastern bank of the Hai and the Tigris. The attack on the western bank, however, was repulsed with great loss. It is difficult to ascertain the real facts of the case, as there were so few survivors to tell the tale; but it would appear that the Turks knew exactly when and where to expect the attack. During the night they had thrown up some dummy trenches in "no man's lands," and had partially filled in two curtain trenches on the left. The 37th Brigade bombers on the left of the attack were "thrown out of gear" by the filled-in trenches, while the 36th Sikhs were deceived by the dummy trenches, which they mistook for their objective. The Turks, moreover, either knew or had calculated the exact limits of our barrage, for they had concealed a

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battery of machine guns where it could enfilade the dummy trenches at very close range and yet remain untouched by our barrage. The Turks had also erected a very conspicuous sandbag tower in the centre of their position. This tower was known to contain machine guns, but for some reason it had not been destroyed by our guns during the preliminary bombardment. The 36th Sikhs showed the greatest gallantry, but were practically annihilated by enfilade fire from the concealed machine guns on their left and the sandbag tower on their right.

The 45th Sikhs found no dummy trenches on their line of advance. They consequently went on to their proper objective, the enemy's first and second lines. This exposed their left flank and brought them under very close enfilade machine gun fire from the sandbag tower. Under cover of this fire the Turks counter-attacked the exposed flank, rolled it up, and practically wiped the regiment out of existence.

On the 3rd February the other two battalions of the 37th Brigade, the 4th Devons and 1/9 Gurkhas, attacked over the same ground. This time the sandbag tower had been destroyed before the attack commenced, and our barrage was really effective. Consequently this attack penetrated comparatively easily to the enemy's third line. A fierce fight lasted all day; but the Turks were eventually defeated with great slaughter.

That evening the 36th Brigade relieved the 37th, and took the Liquorice Factory with comparatively little trouble. The 13th Division then came in on the left of the 14th and the whole corps swung quarter left and fought its way, step by step, into the Dhara Bend. There were several fierce little fights during this operation, but nothing happened of any general interest.

On the 15th February 2,200 Turks, all that were left of the defenders of the Hai Salient and Dhara Bend, surrendered in their last line of redoubts on the river bank. The right bank of the Tigris was now entirely clear of the Turks. They had fought splendidly throughout and had gained our unqualified admiration. General Maude's methodical advance had pushed them back step

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by step, without any respite, for three weeks, but they had continued fighting with the utmost tenacity until vastly outnumbered in their last position with the river barraged behind them.

It commenced to rain on the very night of the Dhara Bend surrender. Very soon the whole countryside was under water, and our transport and guns were again immobilised. The Turks had been praying for this rain, but fortune had favoured us.

General Maude spent the next week, while the ground was drying up, in thoroughly mistifying the Turks. The 27th Punjabis carried out a raid across the river at Magasis; Turkish aeroplanes were allowed to see pontoons being towed up towards the month of the Hai, and night after night the Turks were allowed to hear the creaking of the ungreased wheels of A. T. Carts, and the dumping of timber near the Liquorice Factory. The Turks were consequently convinced that General Maude intended to cross near Kut, and posted their reserves accordingly.

On the morning of the 22nd of February the 7th Division commenced a real attack at Sonnayat. That same evening the 37th Brigade, followed by the 36th Brigade, marched towards the point of the Shumran Bend. Secrecy had been so well maintained that it was not until then that we had any idea where the crossing was to take place. The 37th Brigade which had been reconstituted after the slaughter of the 1st and 3rd of February and now consisted almost entirely of fresh, rested battalions, had been given the honour of crossing first.

The actual crossing was carried out in pontoons rowed by volunteers of the 4th Hants. The Norfolks were to cross at No. 1 ferry at the point of the Shumran Bend, while the 2/9th Gurkhas and the 1/2nd Gurkhas were to cross at Nos. 2 and 3 ferries farther down stream. The river was 400 yards wide, with a 5 knot current. Rowing clumsy pontoons across was consequently no light task and the journeys could only be carried out very slowly.

The pontoons pushed off from all 3 ferries simultaneously at the first sign of dawn. The Norfolks at No. 1 ferry were lucky and gained a footing on the opposite bank before an opposing machine gun opened fire on them. They then, assisted by the

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the fire of guns and trench mortars from across the river, gradually spread up and across the point of the peninsula until they had secured a sufficient Bridgehead. Crossing at this ferry was even then far from being pleasant. The whole surface of the river was churned up by bullets and shells, but the Hants rowers and the Norfolks continued the work of embarking, rowing across and disembarking with the greatest coolness, in spite of very heavy casualties.

The 2nd and 9th Gurkhas at Nos. 2 and 3 ferries, however, were not so lucky. Both regiments struck strong points and came under machine gun fire before they were half way across the river. The entire crew of some of the pontoons became casualties before they reached the other bank. The Turks were lining a "bund" some ten or twelve feet above the water level and greeted the few pontoons which did get across with a shower of bombs; but the gallant Gurkhas rushed the "bund" and hung on to it in isolated little groups until we were able to link up with them in the evening. Major Wheeler of the 9th Gurkhas gained a V. C. on this occasion. The Hants rowers at Nos. 2 and 3 ferries continued to row their pontoons backwards and forwards in the most gallant manner through an absolute inferno of bullets and shells although most of them became casualties. By about 7 A.M., however, these two ferries had to be abandoned altogether on account of enfilade fire from Turkish guns at Dhara Barracks.

Luckily the Turkish gunners were unable to find the bridge which was being built at No. 1 ferry, as it was in dead ground from both flanks of the line taken up by the Norfolks, and our aeroplanes foiled the repeated attempts of the enemy's airmen to "spot" for the guns which were trying to destroy it. Shells were falling all round the bridge the whole time it was being constructed, but only one actually hit it. The bridge was completed at 4 P.M., after eight hours work. By that time the majority of the 37th Brigade had already crossed in pontoons at No. 1 ferry, so the bridge was allotted to the 36th Brigade, who crossed quickly and extended the line on the right of the 37th Brigade.

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At dawn the next morning, the 24th February, the whole 14th Division swept up the Shumran peninsula. The 36th Brigade was on the right of the line, with the 37th Brigade on the left and the 35th Brigade in close support. The Turks were holding one line across the centre of the peninsula and a second one across the head of it. Both flanks of our attack were held up for some time by nests of machine guns; but in the centre, the 26th and 62nd Punjabis and the Norfolks very quickly broke through the Turkish first line, and then rushed the second line, in spite of heavy enfilade fire from our own guns across the Tigris. These three Battalions sustained heavy casualties during their advance; but their quick break-through relieved the pressure on both flanks of the attack and thoroughly demoralised the Turks, who commenced a general retirement.

Before mid-day the Cavalry Division passed through to cut off the Turks who had abandoned Sannayat during the previous night but the Turkish rear guards did their work very skilfully, thus enabling their comrades from Sannayat to slip out of the net. Kut had, however, been captured, and the whole Turkish army was in precipitate retreat to Baghdad. The prestige of the British had been rehabilitated in the eyes of the Eastern World, and the first phase of General Maude's campaign had been successfully completed.

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THE ARAB INSURRECTION OF 1920-21.

By Captain C. M. P. Durnford, 4/6th Rajputana Rifles.

The following remarks are made from the point of view of the Regimental Officer. The writer therefore does not claim that they are not liable to correction, but he has endeavoured to ensure their reliability by reference to the few authorities available, particularly to Lieut.-General Sir Aylmer Haldane's book, and to various reports issued by the Civil Administration in Iraq.

1. Introduction.

Of the Insurrection in Iraq, during the time when it was in progress, surprisingly little was heard, except in circles which had an immediate interest in the operations.

For this, a variety of reasons may have been responsible.

(*a*) The public mind was still dominated by the Great War, and the number of troops employed during the Insurrection seems unimportant in comparison.

(*b*) The Press knowing that people were tired of "War News," was not prepared to make a feature of an unpopular subject. At the same time, Iraq is not a country where free-lance newspaper reporters are to be found, so that the sources of information were limited to the official *communiqués*.

(*c*) In India, public opinion was occu pied with an engro sing and delicate political situation, and there was little inclination to follow outside events.

It is, therefore, worthwhile to call attention to the fact, that, from July to October 1920, the British Forces in Iraq were faced with a complete and almost unparalleled disaster. The troops in the country consisted of two Indian Divisions, both under strength, and certain Army Troops. These were spread about over an area

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somewhat larger than the United Kingdom. Communications consisted of a single line of railway, of narrow guage, which from Basra to Baghdad alone necessitates a journey of two days duration, even in favourable circumstances. The line is laid on a low mud embankment, and is frequently washed away in the flood season, and is very easy to demolish at any time The alternative to the railway is the river Tigris, on which the journey from Basra to to Baghdad takes anything from five to fifteen days according to the state of the river. The Euphrates is useless as a line of communication, except when small country craft are employed as a means of transport.

Certain areas could not be reached from the Tigris, while for others the railways were useless. Still a third category were served by neither river nor rail.

British influence can only be said to have been firmly established in the localities which had been occupied by considerable bodies of troops during the War. As a result of the communications mentioned above, and the fact that the railway along the Euphrates Valley was then not built, those localities were practically limited to the banks of the Tigris as far north as Samarra.

2. Causes of the Insurrection.

It has been said that one of the reasons for the original campaign in Mesopotamia, was the desire of the British to free the Arabs from Turkish misrule. It seems an unkind whim of fate that within two years of the attainment of this object, liberators and liberated should be fighting among themselves.

Many misunderstandings and influences brought about this unhappy state of affairs.

(*a*) The fact that the Allies had no previously concerted and clearly defined peace terms to present to the Turks in 1918, and that such terms have even now not been fully decided on,* created and creates a condition of affairs which is particularly suitable for the encouragement of intrigue. The bulk of the Arabs undoubtedly were tired of Turkish rule, but there were also certain vested

* The future of Mosul is still undecided.

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interests which would have preferred the old corrupt methods of government to continue. The delay in announcing what the future of the country was to be, undoubtedly gave these latter elements in the population an opportunity to get together with a view to furthering their aims.

(*b*) The freely ventilated, though sometimes loosely worked-out doctrines, relating to the rights of self determination, had penetrated even to the coffee shops and other places of public assembly in Iraq. Newspaper articles which may be read with a feeling of comfortable, not to say smug, approval, in an arm-chair at home, are sometimes difficult of application or even explanation, in places more remote from the beaten track.

Forgetting that a people which cannot defend itself is not likely to have any "Rights" for long, Arab opinion advanced at a gallop towards ideas of a national existence, without foreign leading strings, in which every man should be able to grind his own axe at leisure. British deliberation of method in preparing for the eventual Arab State, proved extremely irritating to the hot-heads and visionaries.

(*c*) A matter more difficult to identify was the anti-British propaganda from outside sources. The then Emir Feisul who is a man of high character and ideals, appeared to fall between the stools of British promises and French methods. In any case, his failure to establish a permanent Arab government in Syria, set him, together with hundreds of Arab officers of varying standards of education, adrift "without visible means of support." It is easy to think of various European nations whose interests in the Near East do not coincide with those of the British Empire. It is equally easy to see why there was no lack of anti-British propaganda in Iraq immediatly before the Insurrection.

(*d*) The political service which existed in Iraq at the outbreak of the Insurrection had carried out yeoman work, and had accomplished wonders in the way of organisation

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in a very short time. Towns, hardly worthy of the name, had electric lighting plants, which Indian towns and cantonments have languished for years. Revenue was being exacted to the uttermost farthing from districts which had hitherto laughed at the efforts of the tax-collector. It is probable that organisation descended upon Iraq too quickly, and, to say the least, appeared to many of the inhabitants as a mixed blessing. The personnel of the political service was drawn from many varying sources. The general ability of the individual was high and the enthusiasm was intense. On the other hand it is probable that lack of knowledge of the language, and of suitable methods for dealing with semi-civilised races, detracted from the value of the services of some of those who were employed in the government of the country. No Arab Sheikh appreciates being dealt with by methods of personal violence, nor does he appreciate personal abuse in public.

(*e*) The Turkish authority, so far as any existed in Irak before the War, was maintained by the ancient method of setting off different elements in the population one against another, and by exploiting feuds between neighbouring tribes.

The British system tended to unite the people by punishing those who took the law into their own hands, and by actively discouraging inter-tribal feuds. The tribal Sheikhs lost a good deal of their influence in consequence, and were less able to restrain their followers in times of disturbance.

(*f*) The Shiah Holy towns on the middle Euphrates with their fanatical, and largely ignorant religious leaders, formed a powder magazine of seditious possibilities which was prepared to blow up on the application of the slightest spark.

The establishment of a powerful central government could only mean a decrease in the authority of the holy men. Their enmity was therefore assured.

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(*g*) Disorder, once started, easily spreads. This is especially so in a country where the ignorance of the people is such that the sinking of a few barges and tugs on the middle Euphrates was reported, and believed, as being the total destruction of the British Navy.

It may therefore be said that the causes of the Insurrection were the violent changes in the methods of government, the ignorance of the people and their leaders, and powerful anti-British propaganda from many sources.

3. The Distribution of the Garrison at the Outbreak of the Insurrection.

The first outbreak took place on June 4th, at Tel Afar, a town of some 10,000 inhabitants in the north-eastern corner of Iraq. Here direct incitement had been provided by the inflammatory speeches of an ex-officer of the Turkish Army.

It must be remembered that, at this time, the G. O. C.-in-Chief whose Headquarters were at Baghdad, was responsible for the British forces in North-West Persia, in addition to those in Iraq. The former were trying to hold back the tide of the invasion of Persia by the Bolshevists. They amounted to an Indian mixed brigade, plus L. of C. troops, with Headquarters at Kasvin. Taking into account the single line of railway which ran to the Persian Frontier, reinforcements took three weeks to reach the North Persian Force from Baghdad.

In Iraq itself, the troops consisted of the 18th Indian Division, with Headquarters at Mosul, and the 17th Indian Division, with Headquarters at Baghdad. There were also three battalions of Indian Infantry under the G. O. C., "River Area," whose Headquarters were at Basra.

The total number of combatants amounted to some 60,000, but from various causes the number available for actual fighting amounted to little more than half of this total.

Some of these causes were as follows :—

(*a*) There were still 14,000 Turkish prisoners in the country, the guarding of whom absorbed one Brigade.

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(*b*) The new hill-station at Karind, where the bulk of the British wives and families were located, had to be provided with adequate protection.

(*c*) A large number of combatants were employed as guards over the immense dumps of military stores which remained as a legacy from the war.

Thus it came about that the only mobile reserve at the disposal of G. H. Q. at the time when the Insurrection broke out in earnest, consisted of some 500 British, and 3,000 Indian troops.

4. The Outbreak.

By July 1st, 1920, the tribes on the middle Euphrates had risen and railway communication between Basra and Baghdad had ceased.

It was a simple matter for the Arabs to destroy whole lengths of the railway. They had merely to hitch on a few camels by means of ropes, to the rails and drag them out into the desert, or, whenever possible, to the bank of the nearest canal, where they were gently dropped in.

When the re-occupation of the country took place, many rails were found to have been already used in the construction of houses and water-hoists, a sure sign that the users thought that the British had gone for good. Similarly, every village within two or three miles of the railway, had its buried store of sleepers.

By the middle of July, British garrisons, some of whom were badly situated tactically and with regard to supplies, were besieged at half a dozen points hundreds of miles apart.

Everywhere political officers were calling for support.

The perimeter to be defended at Baghdad and at Basra was in each case more than twenty miles in circumference.

In addition to dealing with these problems, G. H. Q. had to find additional garrisons for outlying places of importance, such as Shaibah, the railway base and aerodrome in the Basra district.

Early during the Insurrection came the disaster to the Manchester Column and the failure of the first attempt to relieve Rumaitha.

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It is, therefore, not difficult to appreciate the remarks of the Commander-in-Chief when speaking of this period.

"I can recall in my military career no cycle.....of quite such tense anxiety. For several weeks the situation of affairs was critical, and visions of the siege and fall of Khartum sometimes flitted through my mind." ("The Insurrection in Mesopotamia in 1920," by Lieutenant-General Sir Aylmer L. Haldane.)

These are the remarks of an officer who held high commands on the Western Front during the whole of the Great War.

5. The Suppression of the Insurrection.

The measures adopted to deal with the situation above described took place in four more or less clearly defined periods:—

(*a*) The period of concentration.

(*b*) The period of measures dictated by enemy action.

(*c*) The period of punitive measures.

(*d*) The period of final pacification.

(*a*) *The period of concentration.*

Outlying garrisons were withdrawn, where it was possible to do so, and concentrated at centres from which their combined strength could be usefully employed in a variety of directions.

At the same time the grip on the essential Lines of Communication, between the main centres remaining in our hands, was tightened.

The garrisons of Baghdad, Basra, and other places, were reduced in numbers and at the same time strengthened, by the construction of regular perimeters of blockhouses and continuous fences of barbed wire.

Volunteers from the Indian Labour Corps were armed and given a very brief training, and were then used to relieve regular troops which were guarding supply and ordnance dumps.

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(*b*) *The period of measures dictated by enemy action.*

Small columns were formed, large ones not being forthcoming, for the relief of those beleagured garrisons which were cut off in the most actively hostile parts of the country. During this period the relieved garrisons were brought out by the relieving forces, and the locality concerned was abandoned for the time being.

Fighting was restricted to the minimum necessary for the attainment of the object immediately in view. The forces available had, as yet, no margin for purely punitive operations.

(*c*) *The period of punitive measures.*

As reinforcements filtered into the country from India, and other troops returned from Persia, stronger columns were formed which gradually re-occupied the previously abandoned districts and covered the reconstruction of the railways.

At one time there were a dozen of these columns operating in different areas or towards the same point from different directions. The garrisons which had remained besieged were relieved, and definitely punitive operations were put in hand. These consisted of the destruction of villages whose inhabitants refused to make their submission, the burning of their buried stores of winter forage, and the driving in of flocks and herds, where such could be located.

The destruction and demolition of forts and villages had very often to be carried out by the infantry with picks.

The effects of field howitzer shells and of the amount of ordinary explosives carried by the Sappers and Miners, proved to be extremely local. The usual method, therefore, became to undermine the walls by cutting them nearly through at the base, and then getting a company of infantry to push.

The troops, who at first had been working in the extreme heat of a Mesopotamian summer, now began to experience what the rigours of a winter in that part of the world can mean.

Even on the Lower Euphrates as much as 15° of frost were experienced, together with a cutting wind which met with no obstacle in its path across hundreds of miles of desert.

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By Christmas, 1920, Rumaitha, which had been the centre of the disaffected area, had been re-occupied by Colonel-Commandant Coningham's column, and the back of the rebellion was broken.

(*d*) *The period of final pacification.*

After the close of active hostilities, strong columns, each consisting of one or two squadrons of Indian cavalry, a troop or so of Arab Levies, a Brigade of R. F. A. and five or six battalions of infantry, together with a proportion of divisional troops, visited various parts of country where it was considered expedient to "show the flag."

These columns served the double purpose of expediting the collection of tribal fines in money, rifles or otherwise in kind and also of establishing excellent relations with the Arabs in out-of-the-way districts where British troops had never been seen before.

One Sheikh, presumably a sadder though a wiser man, was heard to remark, "We did not realise that we were up against the British, our leaders told us there were only a few railway coolies with rifles, and that if we joined in the rising, we should soon have access to unlimited loot."

There is an Arab proverb to the effect that the Arab only believes in what he can see. It is, therefore, possible that the fact that, when the Sheikhs came into Colonel-Commandant Coningham's camp opposite Rumaitha, to discuss terms of submission, the camp was so arranged that they passed a line of field-gun muzzles, all grinning longingly in the direction of the town, may have appealed to the Sheikhs sense of vision in an overpowering manner.

One of the most important of these propaganda marches was carried out through the country of the Muntafiq tribe which lies between Kut-al-Amarah and Nasiriyeh.

To the Turks this area had been a closed book. They had tried more than once to penetrate it, but had failed ignominiously, the power of the Muntafiq and the difficulties of the country being far too much for the forces at their disposal.

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During the Insurrection, luckily for us, the Muntafiq, though sorely tempted, remained neutral. It was, however, necessary to wit hdraw the political personnel from Shatrah, which is the capital of the Muntafiq tribe.

To re-instal the Civil officials in their apppintments two columns marched on Shatrah in January 1921. The column from the north was based on Kut-al-Amarah, and the column from the south on Nasiriyeh.

In his book "My Campaign in Mesopotamia," Major-General Townshend gives expression to a popular misconception, namely, that these two places are connected by the river Gharraf or Shatt-al-Hai. As a matter of fact, the Shatt-al-Hai loses itself in the marshes east of Shattrah, some three marches to the north of Nasiriyeh.

The northern column referred to above, was therefore provided with transport consisting largely of small country river craft, while the column from Nasiriyeh depended for its supplies on convoys containing in all some 1,300 A. T. carts.

The northern column soon experienced trouble owing to the fact that the Arabs had built dams across the river at various points in order to control the rain flood water.

The Headquarters of the southern column were electrified one day at receiving on their wireless set, a message to the effect that (as the operator spelt it), the Arabs were "damning the river." A hurried consultation was held and the advice wirelessed back, "Suggest you blast the damns." It is unknown whether or not the suggestion was acted upon.

The two columns eventually met twelve miles north of Shattrah, but owing to the rapid fall which was taking place in the level of the water in the Shatt-al-Hai, the northern column was compelled to withdraw at once by forced marches to its base.

The southern column received a very friendly reception at Shattrah, and Sheikh Khaiyun-al-Ubaib, the paramount chief of the Muntafiq, entertained the Staff and most of the unit commanders to a gargantuan feast in honour of the occasion.

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This column had established staging posts, each garrisoned by half a battalion of infantry at the end of each day's march on its outward trek. These garrisons provided the necessary escorts to the outward and return convoys of A. T. carts.

Owing to the length of the column proper, it was not found practicable to employ the usual diamond formation, of moving flank guards. In any case the numerous canals and irrigation cuttings would have made it impossible for such flank guards to keep pace with the column.

A system of picquets similar to those employed in mountain warfare was therefore employed, and proved very successful in spite of the fact that the country was practically flat.

What was practically the final column to be sent out, *i.e.*, the column to Suq-as Shuyuk on the western end of the Hamar Lake, had a somewhat unusual experience.

Here, the Political Officer had hung on to his post until the townspeople, with the best will in the world, were unable to hold back from participation in the Insurrection owing to fear of the desert Arabs at their gates. Finally it was decided to slip away from Suq until better days should come. The departure of the Political Officer took place at that time when the local population was taking its morning meal. The route to the river bank, about two hundred yards away, lay through a kind of public square. To avoid attracting attention the Political Officer left all his belongings in his house and slipped quietly down to the loyal quay, where a river monitor was waiting with steam up.

He got clear of the town and arrived safely at Nasiriyeh without incident, and the cloud of the Insurrection hid Suq for the next few months.

When the column of re-occupation reached Suq to re-establish political control, everyone was more than surprised to find the Union Jack still flying on the political office, and the personal and official effects of the late P. O. exactly as he had left them at the time of his precipitate departure.

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His action had removed, in the nick of time, the potential cause of an irritation which might have had serious and costly effects. The townspeople were undoubtedly 'one up' over the incident, and at the same time they had saved their town from the unpleasant events which overtook less well-behaved communities elsewhere.

6. The Arab and his Country.

With regard to Iraq generally, it is difficult to find a definite frontier either geographically or ethnologically.

On the east and north-east there are the hills on the Persian border and in Kurdistan, but in other directions the frontiers of the Arab race do not coincide with those of Iraq, neither do the frontiers of Iraq coincide with any marked natural feature. This results in the population of the country being abnormally sensitive to influence from neighbouring countries and possibly contains the seeds of future trouble for the young Arab state.

The Mesopotamian Arab is not a determined fighter, neither is he a good shot. He is capable of rapid movement and collects in large numbers out of "the blue," in an astonishingly short time. His supply arrangements usually consists of the largest quantity of dates which he can carry when he sets out from home; when these need replenishing tribal concentrations have a habit of dispersing for a few days.

Arabs may have been a chivalrous race at one period in their history, but they cannot be generally classified as such to-day. Their treatment of wounded and unwounded prisoners varied, but it was generally bad, and very often was barbarous in the extreme. One Sheikh apologised for the behaviour of his section in this respect by saying that when the men of his section saw women and children blown to pieces by aeroplane bombs, they became quite uncontrollable. The Arab women were usually more savage in their treatment of prisoners than the men. It cannot be said that the unrestricted use of bombing planes over open villages was popular amongst the arms of the service who formed the ground forces. At the same time, the difficulty, the danger and the value of the airmen's task were fully appreciated.

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With all his faults, the Arab is usually an attractive individual with good physique and a keen sense of humour.

The national weakness may be said to be avarice. Thomas Lyell in his recently published "Ins and Outs of Mesopotamia," says.

"Having adjudged cases in the Criminal Court of Baghdad for a year, sitting daily for at least five hours, I cannot remember any case which had not this vice as a motive force."

Tribesman and townsman, alike are money worshippers to the last degree, and it is a peculiarity that the headquarters of the cult are in the Shiah holy towns themselves.

There is a crying need for a mobile civil medical service to work among the tribes; and the many small towns, which contain from five to fifteen thousand inhabitants, each needs its local hospital.

Outside help in this direction would probably be welcome and it would be the best way in which to overcome the Arabs' noted suspicion of foreigners.

Hopeful signs for the future lie in the facts that there is a great demand for education, the revenue is increasing considerably and new fields of potential wealth, such as cotton growing and silkworm culture, are being investigated and experimented in.

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GLIDING AND ITS RELATION TO AERONAUTICAL DEVELOPMENT (LECTURE DELIVERED BEFORE THE UNITED SERVICE INSTITUTION OF INDIA, SIMLA).

By Group Captain J. A. CHAMIER, C.M.G., D.S.O., O.B.E., Royal Air Force.

INTRODUCTION.

We are a curiously incurious people—a sudden puff of wind on a still day, a thunderclap, a local shower of rain—these are everyday occurrences for which there may or may not be completely satisfactory scientific explanation, but for which most of us could not account and upon which few of us speculate. We are dependent on "the weather" for our comfort in our daily life and to some of us who are farmers the choice of a right weather period for our work may make a big financial difference, and yet beyond a few phrases such as "red sky at night is the shepherd's delight" how few make any real attempt to learn about it, let alone control it. And so it is with the flight of birds—we are struggling to master the air, a mastery that may make as great a difference to our prosperity in peace as to our existence in war (for Empires are built on communications), and yet we ignore the lessons which those masters of the air, the birds, may have to teach us. I suppose there is no one here in Simla who has not carelessly glanced at the birds we see every day gliding without effort and without a single flap of their wings, where they please, only to dismiss the subject from his mind with hardly enough interest to wonder at the apparent miracle. Solomon was at least sufficiently impressed with the phenomenon "there be 3 things that be too hard for me, yea 4 that I cannot understand—the way of an eagle in the air"—I won't tell you the rest of them, you can look them up for yourselves, but I will tell you this that he classed flight with the mystery of "the way of a man with a maid."

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I have spoken to many highly placed and highly intelligent people at Simla about the possibility of gliding from Kalka to Simla and most of them have thought me mad—"to glide up hill" without the expenditure of power is a fancy of one of these crazy airmen, but the bird is doing it every day before our eyes and we don't trouble to ask how.

If then I speak to you to-day of gliding I make no apology for mixing it up with references to the soaring flight of birds, in the hope that I may point to the lines of possible progress.

Historical.

Although I said that we are as a people incurious about the problems of flight, there has existed from the earliest times a small band of experimenters who have devoted their energies, often their lives, to acquire that knowledge. I do not intend to bore you with a long historical review, but a very brief reference to early experiments is necessary to understand the present position. Scattered through early legend are tales of people like Icayus who flew so high that the sun melted the wax of his wings, and all these tales of legendary heroes and magicians with flying carpets have this in common that the start is made from a hill or high tower. (Incidentally the end is always the same: anything left after the landing was finished off by people who disliked sorcerers.) This, coupled with the fact that the East is the home of history and legend, as it is also the home of soaring and gliding birds, makes it legitimate to infer that the majority of early efforts were directed towards gliding as opposed to flapping flight; to the Oriental mind progression without effort must have seemed particularly attractive. There are grounds for belief that some small degree of success was achieved. An English monk is said to have "flown" from a hill in Spain 7/8ths of a mile in Edward, the Confessor's time—while under James IV a sportsman volunteered to fly from Stirling Castle to France. That he fell at the start and broke his leg he attributed to the fact that his wings were made of an "earth borne" farmyard fowl's feathers; he was sure he would have succeeded with an eagle's. Thereafter there is a great gap till Sir George Cayley in 1801, running against the breeze with a glider of 300 sq. feet of surface was

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"lifted and carried several yards together," and we get another gap till 1850 when we note some successful experiments of Captain le Bris with a man carrying model albatross towed behind a cart. A height of 300 feet is said to have been reached, but a bad crash stopped these as so many other experiments. A similar result followed Mouillard's experiments with artificial wings in 1881: these folded up like a butterfly and pinched him badly, after which he confined his experiments to theoretical work with a pen.

Turning from these early efforts we come to the father of modern flight, a German called Lilienthal, so short a time ago as 1890. He reverted to the sound idea of using gravity as his motive power, gliding against the wind from an artificial conical hill in the neighbourhood of Berlin. He made over 2,000 glides before he was killed in 1896. His great difficulty was in maintaining his balance which he did by shifting his weight, but he finally decided to fit a controllable tail plane and it was in manipulating this that he died. Pilcher, in England, followed closely in his footsteps; he also died from an accident in 1899.

The next great step forward was made by Chanute, an American Engineer, about the time of Lilienthal's death; his glider is really in its essentials the father of the present aeroplane, and the great advance was in the matter of control. This requires a word of explanation. In any given flying machine (in which I include a bird) there is a point in which the upward pressure of the air on all the surfaces may be supposed to be concentrated: there is obviously also in any solid body a point in which all its weight is supposed to be concentrated, *i.e.*, the centre of gravity. Now the condition of stability in any form of flight is that the centre of pressure and centre of gravity should coincide in a vertical line. Varying gusts, change in the attitude of the machine, etc., cause the centre of pressure to move about fore and aft, to port or starboard, and the early experimenters tried to move their weight about to cause it to come in line with the centre of pressure. This was clumsy and not quick enough, and Chanute jumped at the logical alternative of so manipulating his planes that the centre of pressure was moved back to the centre of gravity. That is the system we use universally on the aeroplanes of to-day.

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For example, suppose a gust throws the aeroplane up by the head, this implies that the centre of pressure has got ahead of our centre of gravity so we bend our tail elevator down to catch more wind so that the pressure on the tail is greater and brings our total pressure back under the centre of gravity. His success was immediate and 700 short glides were made without a single mishap. His work was completed by Prof. Montgomery who adopted bending or warping planes on his glider and thereby secured extraordinary latteral control. It is too easy to forget that in 1905 this glider carrying one Maloney was released from a balloon at 4,000 ft. and spiralled, circled and performed all manner of evolutions—alighting easily on a pre arranged spot after 20 minutes. An accident shortly after killed Maloney and public interest once more lapsed. Montgomery himself was killed in 1911 having resumed gliding in person.

During this time, *i.e.*, from 1900 on, the famous Wright brothers started experiments in the light of all available knowledge, though this was not great. Concentrating on the problem of control, they decided to abandon any idea of automatic or inherent stability, but to adopt a means of interconnecting warping wings with a vertical rudder for sideways balance, and a supplementary plane for fore and aft balance to bring the centre of pressure back to the centre of gravity when disturbed from that position. As early as 1902 nearly 1,000 flights were made in 2 months—in 1911 a duration of 10 minutes was accomplished which remained unbeaten for 11 years. Similar experiments were simultaneously being made in France by Ferber, Voisin, Archdeacon and Bleriot, but the success of the Wrights with their home-made engine, and the introduction in France of the unnaturally light Gnome rotary engine had the most unexpected results. "You can make a tea tray fly if you give it enough power" and the problem of an adequate control (not necessarily the best) having been solved simultaneously with the invention of a light power plant, all attention was concentrated on the improvement of mechanical design. It will be realised that we may improve the speed and lifting power of our aeroplanes by increasing horse power and decreasing weight—we may alternatively try and get better results with a given power

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by improvements in design. The former course contains no doubtful elements: it is "plain sailing" as science advances our knowledge of materials, and it is thus a short but expensive cut to improved performance. The alternative may be far sounder economically but involves prolonged study and experiment for it deals with a subject of which we have only explored the fringes the road is long and laborious. Small wonder then that in the hustle and bustle of war all nations should have adopted the short cut to speedy production and rapid improvement at any cost, and that we should have found ourselves in 1919 with aircraft which *power for power* showed little advance in aerodynamic qualities on those we used 4 years before. The B. E. of 1915 carried 2 men and 1 bomb at 80 miles an hour to 10,000 feet with 90 horse power; an analogous plane to-day carries a similar load at 110 m. p. h. to 18,000 feet with 275 h. p.

The revival.—There is little doubt that at the end of the war there existed (as there exists to-day) a majority of fairly instructed opinion of the belief that gliding had played its part and in accordance with the natural laws of progress had vanished from the scene. By this theory its rôle was to utilise the cheap motive power of gravity (and indeed no other power was available) to show the way to the correct form and disposition of supporting surfaces and the way to control them—the rest was best left to the mechanical development of power driven flight. A minority however is firm in the belief that the real secret of the air may be still undisclosed, that power driven flight as we know it to-day is flight by brute force in neglect of power available from natural sources, and that by gliding alone are we likely to discover natural flight. The reasons for this will appear in the course of my lecture but I must here confess that it was an artificial circumstance which has caused the revival of gliding, and without which the believers in gliding might have been lone voices crying in the wilderness. As a result of the Treaty of Versailles, Germany was debarred from the short cut of increased power to which I have referred above; a complete prohibition of construction was followed by the imposition of severe restrictions on horse power; thus aeronautical research was turned to the possibilities of aerodynamic improvement and all the inventive ingenuity of the Teuton turned towards

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evolving machines of the highest efficiency within the prohibited rules. It was natural therefore for their enquiring minds to turn back to the search for knowledge of any natural power afforded by the air and a concentration on gliding offered hopes of acquiring that knowledge.

In 1920, therefore, gliding was revived at an officially supported meeting in the Rhon Hills; although a flight of 5 minutes was the longest duration made it was held that much aerodynamic knowledge had been acquired and the meeting was repeated in 1921. Although the duration was again small, 128 flights were made varying from 50 yards to 2½ miles and soon after the close of the meeting a flight of 21 minutes was made during which the glider rose 400 feet above its starting point and landed within 150 yards of that point and not more than 40 feet lower. In 1922 the conditions laid down for this German meeting were that the competitor must fly for 40 minutes returning too near his starting point—he must then fly between 2 posts 100 yards apart and then fly 3 miles measured in a straight line before landing. In spite of their severity these conditions were easily fulfilled by 2 men and a duration was set up of 3 hours, the landing being made at a point higher than the start. Widespread interest was now aroused and the Daily Mail offered a prize of £1,000 for the longest flight, the only condition attached being that the minimum duration should be 15 minutes. It is queer now to think that many bets were made against the prize being won, so little being known as to cause and effect that some strange power was attributed to the winds in the Rhon Hills which was supposed to be absent in the chosen places in England and France. At this meeting fine flights were made by Mr. Raynham, Squadron Leader Saul, and M. Fokker, but the prize was won by Maneyrol, a Frenchman with a world's record duration of 3 hours 21 minutes. Since that time the duration has been put up to 8½ hours; an aeroplane rather like our Avro has glided in Morocco with engine stopped for over 3 hours, the height record is 1,365 feet above starting point and distance in a straight line 8½ miles. At the Itford Hill meeting one or two facts were very obvious; the first was that few of the gliders had adequate control arrangements, secondly, that good

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aeroplane designers could come to hopeless grief when designing a machine which did not rely on brute force, thirdly, that queer looking contraptions like M. Peyret's show surprising results in defiance of predictions by "experts" that they would never fly! In other words there was much to confirm the suspicion that we know precious little about some branches of aerodynamics and that our present day aircraft fly by sheer power possibly in spite of faulty design. Here then is our plea for gliding, but before I come on to the lessons to be learnt and possible lines of improvement, I must stop by the way and show you under what conditions these durations have been attained.

How man glides.—There are many explanations of the soaring flight of birds, some of which I shall touch on in due course, but there is not the least doubt as to how the present gliding records are made. The first necessity is an upward current of wind; this is found in temperate climates on the windward slopes of hills and in every place where prolonged gliding has up to date been carried out we find the conditions shown diagrammatically in the sketch. (Fig. 1.)

As a second condition we must have great controllability in the glider under conditions of to-day: "sitting in a jet of air" in close proximity to a hill side is an acrobatic feat at the best of times, and the pilot must have full control of his machine to be able to dive it or town it "on a sixpence" if he is not to get out of the region of soarable air. Finally we want a glider which must primarily have two characteristics, slow speed (which is obtained by giving it a large surface in comparison to its weight) and a good gliding angle (which is only achieved by perfection in aerodynamic design). The reason for this is explained in my sketch. (Fig. 2.) In this I have supposed a glider gliding downwards under the influence of gravity at a rate of travel of 24 miles an hour with a good gliding angle of 1 in 12; you will all realise that if it started off a hill 2 miles high in perfectly still air it would have reached the ground (*i.e.*, last height to an extent of 2 miles) in 1 hour. But if the air has an upward trend over the whole distance of 24 miles of only 2 m.p.h., the path of the glider which is still a slope through the air is horizontal with reference to the

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Fig. 1.

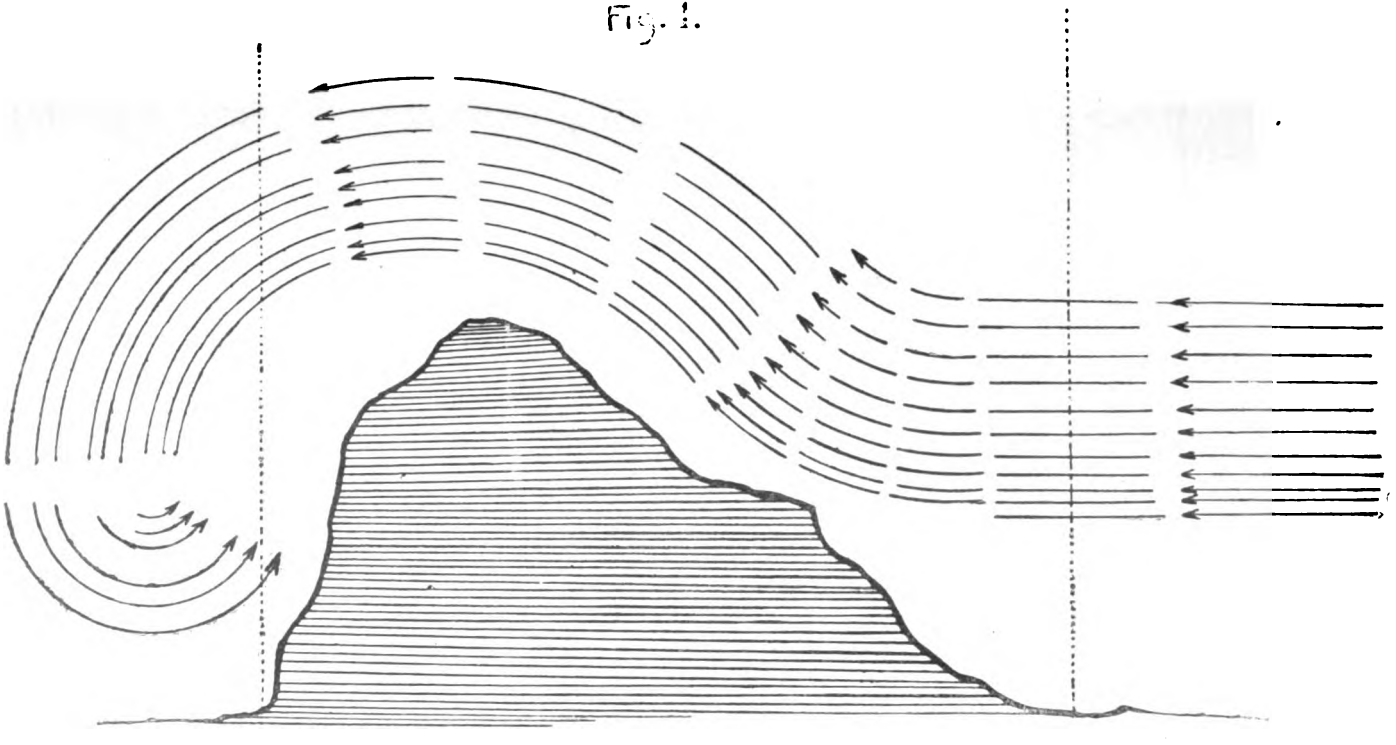
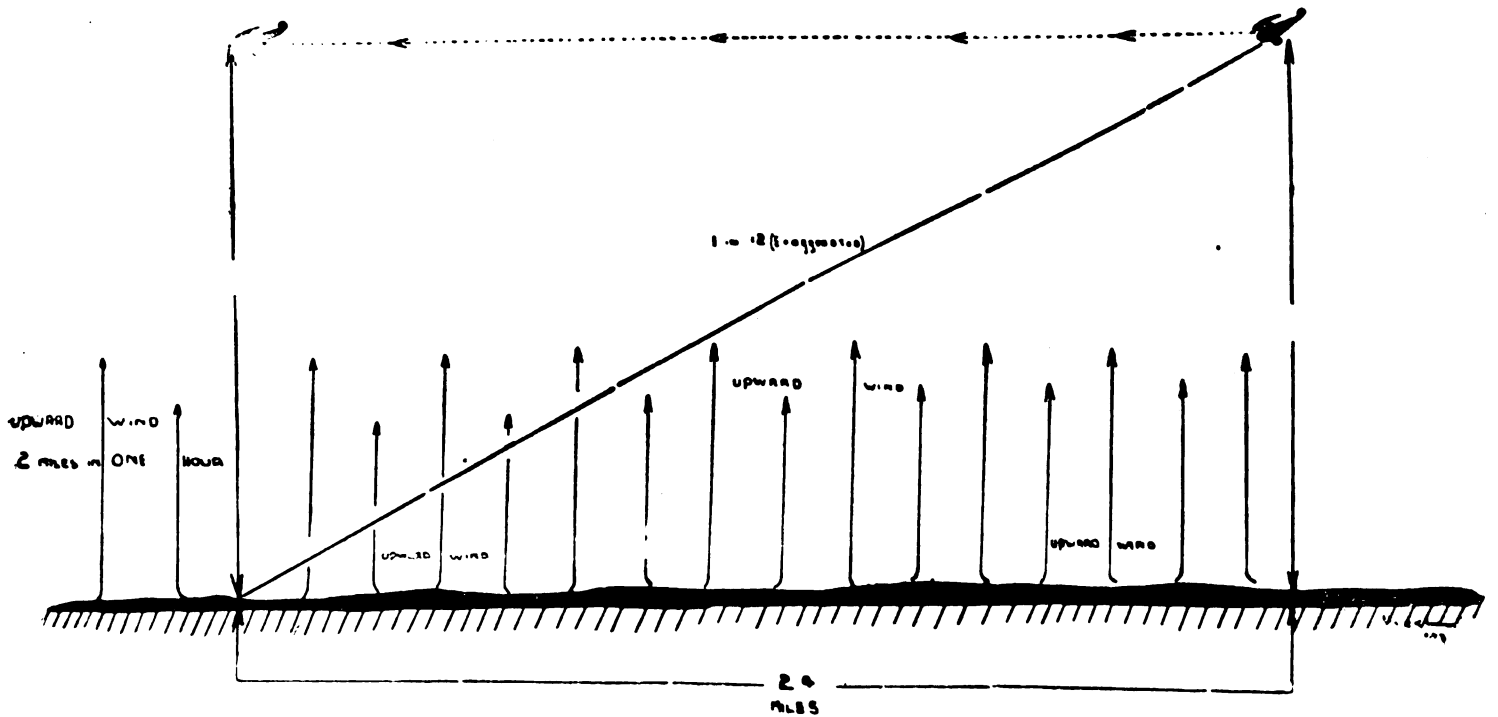


DIAGRAM. 1. Illustration of Wind blowing against a Hill.

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Fig 2.



GLIDING ONE HOUR

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earth, and so long as these conditions exist, gliding could continue indefinitely. Incidentally an up current of 3 m.p.h., would permit height to be gained at the rate of 1 m.p.h., *i.e.*, up to Solon from Kalka.

These conditions are all perfectly possible of attainment—an up current of 3 m.p.h. may be almost unnoticeable, there is hardly a breath of wind and it is marked as "calm," on the official Beauport wind scale used by sailors.

Now suppose all other conditions unchanged except the speed which is doubled to 48 miles an hour or the gliding angle worsened to 1 in 6: the rate of loss of height is in each case 4 m.p.h., from which we deduct 2 m.p.h. for the upward trend of the wind. We therefore reach the ground at the end of 1 hour's flight. We see now why we have hardly noticed up currents in the modern aeroplane (though they *have* been noticed by pilots) since in our modern machine we probably glide normally at about 64 m.p.h. and at a gliding angle of about 1 in 8. We should want an up current of 8 m.p.h. to sustain us and we have no reason to believe that such p werful currents are common.

Soaring Birds in Tropical Countries.

These are the conditions under which man has actually "soared," confined like a policeman on his beat to a narrow strip of hill side, and it is as well to realise what are actual facts before I plunge you into what is admittedly theory, though I hope that theory will interest you. You will realise that the facts alone show that under certain conditions we may stay in the air and learn much. For example we may find out the relation between model and full scale experiments which is very difficult to ascertain, since in full scale work matters are complicated by the propellor blast and other causes. We shall learn something about the air, and we shall improve our present type of aeroplane, but facts do not at first sight hold out much hope of using gliding as an assistance to travel from place to place; we cannot put up with air lines more or less confined to the sides of hills against which a wind is blowing. Moreover it requires little observation to show that in tropical countries like India, soaring

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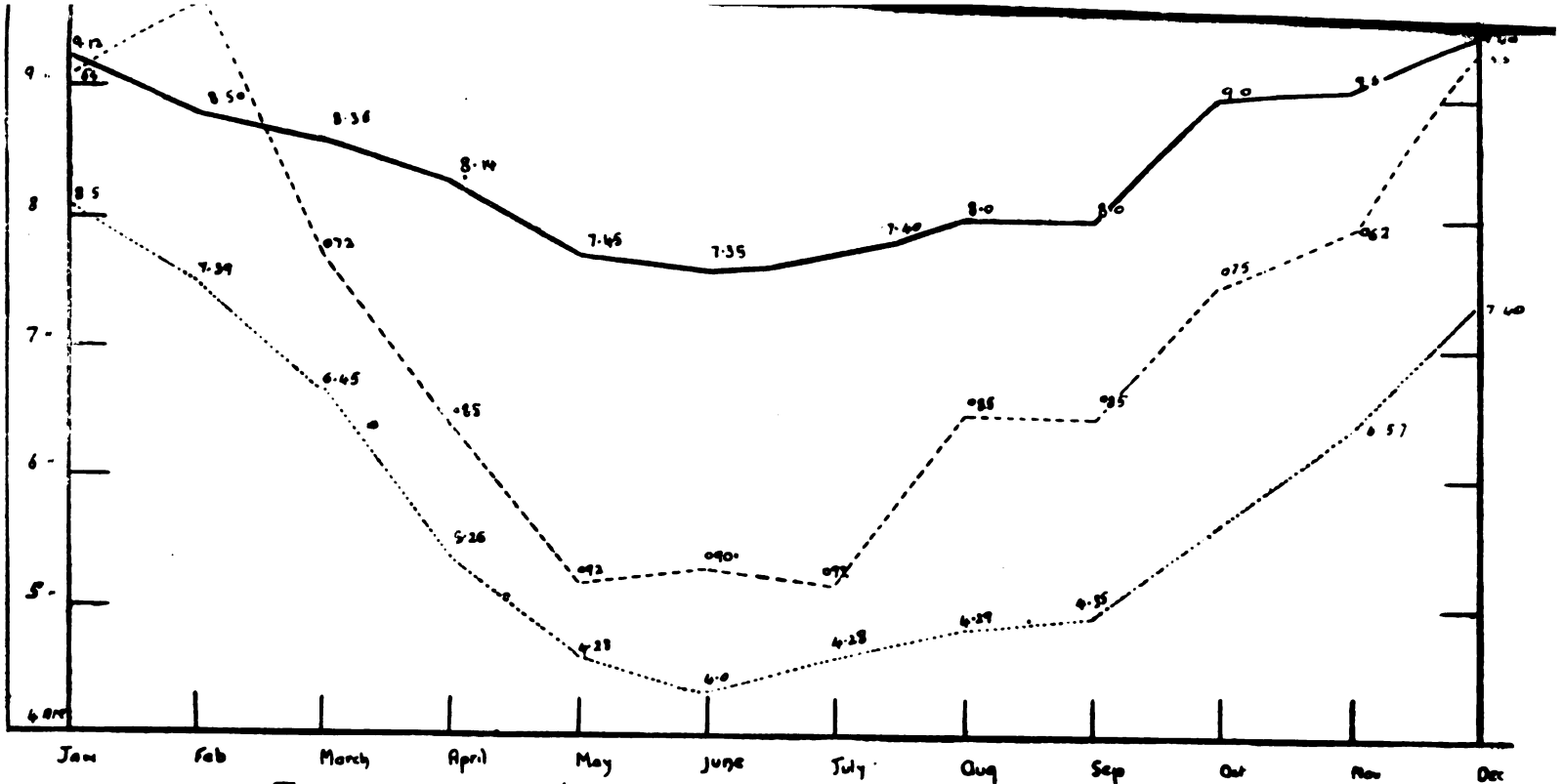
birds are not confined to hill sides, but glide without flapping for hours on end apparently at will from place to place over plain as well as hill. I have said we do not know how it *is* done but I now proceed to explain how it *may* be done.

I now explain what may happen in tropical plain country. Sunlight has little or no power to heat air directly by its passage through it, but when sunlight strikes a solid object certain heat rays are thrown off or reflected by it. We prove this in the ordinary green house, or glass house, for the glass is more or less impassable by these black rays and confines the heat reflected by the wall against which it is built and raises the temperature much higher than that of the surrounding air. In tropical countries therefore we will find certain very heated air given off from plain earth, while areas over woods and water are less highly heated. Hot air rises very powerfully as we all know from the draught up the chimney, and so we may expect to get rising currents over the plains in hot weather unequally distributed at the outset but spreading as they rise till at a certain height whole great areas of air are rising steadily. Incidentally I may say that the "sea breezes" experienced on the coast are normally caused by cold air flowing in low down from the sea to take the place of the hot air rising over the land, and also that all airmen recognise upward "bumps" of differences in the air when passing from sea to land, and "down drops" when passing from land over sea or woods.

We get very reasonable confirmation of this theory when we see birds circling in clusters over land until they rise to a certain height when they glide away horizontally in any direction. We may also point to the fact that no soaring takes place at a height over the open sea; the albatross and the gull only soar near land or near a ship.

But there is even further evidence of a careful observer (Dr. Hankin, to whose book "Animal Flight" I am greatly indebted for much of my material) certain facts that I have put into the form of a graph. (Fig. 3.) This graph represents the time that birds at Agra in 1910-11 were observed to start soaring flight, the heat of the atmosphere at 8 A.M. on each occasion, and the time of

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Time soaring observed to start

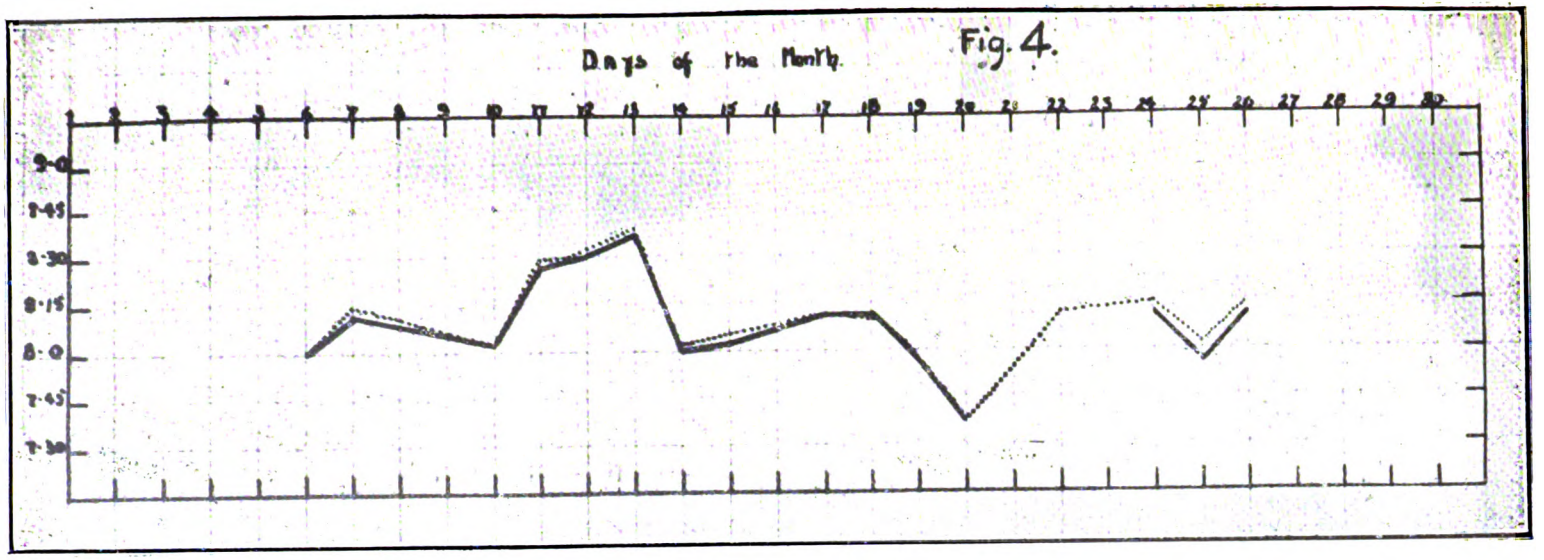
Time of sunrise

Temperature line. (Farenheit)

Graph showing Time of start of Soaring Birds, Heat and Sunrise.

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Curves showing daily times of appearance of Heat Eddies on the bastion by Umar Singh. Gate of Agra Fort (continuous line) and times of development of sun soarability in Agra City (dotted lines). Both cures refer to the month of April 1910.

E. S Karkham, 1923

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sunrise. The conditions of wind varied from ESE. *vid* south to WNW, the humidity from 15 to 81, the barometer from 29·55 to 30·11 during this time; I have drawn graphs for these lines but they none of them approximate in shape to the soaring line. Again heat eddies are often visible under favourable conditions through glasses, particularly if the eye is near the ground—this sketch (fig. 4) shows how closely visible heat eddies, and times for the start of soaring birds in the plains coincide.

I need not stress the fact that the theory of the connection of soaring with sun-generated heat accounts for the presence of soaring birds in all tropical countries, and for their absence in the colder climate of Northern Europe—doubtless our English birds would have developed this easy method of getting about if it had been worth their while—but I do draw attention to the fact that night birds do not soar. You may answer me that owls have to fly very low because of the difficulty of seeing their prey and it is natural they should flap—and I agree. But if light was the only requisite we should expect soaring birds to start off at break of day, when very empty, to look for food. Whereas actually we see they wait for very considerable periods after sunrise before they take the air, and if you scare them off with a gun long after sunrise, but before the air is soarable, they flap around heavily and settle again.

Here is another interesting fact, namely, that birds always start off in the morning in the order of their weights per square foot. The "cheel" or kite with ½ lb. per square foot starts first, the white scavenger with just over ¾ lb. per square foot goes next about 30 minutes after, the black vulture with 1¼ lb. per square foot is about 30 minutes later still and so on. This rule is absolutely invariable and is exactly what we would expect from the little picture I showed you in our qualifications for a glider. Light weight per square foot means slow speed and slow speed can take advantage of the feeblest up currents.

Other theories of soaring flight.—If this is true you can see the great possibilities opened out, but there is yet another theory of soaring flight, and if this is also true it would extend those possibilities.

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By this latter theory we would make use of the turbulence of the wind. It is fairly certain that no wind is ever "smooth" though we are too apt to consider it as such—in fact airmen know it is often very "bumpy"—and delicate instruments prove that it rises and falls in gusts. Let me take a purely hypothetical case. Suppose that for 1 minute a horizontal wind blows with increasing violence, then for 1 minute it remains at a constant maximum, then for 1 minute it decreases in strength, and then for 1 minute remains at a constant minimum. Now the lifting faculty of a glider or aeroplane is a power of the speed with which that plane meets and diverts the air. As a glider entering the period of increasing gusts has definite momentum which prevents it instantaneously conforming to the new speeds of the wind, it follows that if it meets a gust head on, more air than normal will pass under the wing and a gain of height will be registered. In other words until the momentum has been reduced to a new normal, the increasing speed of the wind is equivalent to an increasing speed of flight in a steady wind which obviously results in gain. During the ensuing period of steady wind the glider may turn beam on and will ose a little height. When the period of decreasing gust is reached the glider will turn tail on to the wind and once more it will be in position where more wind than normal is passing under the wing, for in this position when considering relative speeds, a decreasing wind is equivalent to an increasing glider speed. At the next period of steady minimum the glider will once more turn beam on. Under these conditions the flight path would in practice become a climbing spiral of which the diameter will be dependent on the gust periods. When a certain height is reached it will be possible to glide in any direction by the following method. If going up wind height may be gained against increasing gusts and lost in decreasing gusts and periods of steady wind. In this way height will gradually be lost, but if the gliding angle is good the loss will be very small and it will be long before resort will have to be had to circling as above described to gain height. On the other hand if travelling down wind height will be gained during periods of decreasing wind and lost during steady period or periods of increase but in this

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case very considerable momentum (which has reference to the *earth* and not the speed of the wind) will be gained and the total losses will be regained by an occasional swoop round to face an increasing gust of wind, when the great momentum gained will cause a sudden gain of height which will probably compensate for losses. Dr. Hankin calls this "lee looping" and it is a form of flight which can often be seen in the plains.

Again some authorities assert that horizontal gusts of wind must inevitably be accompanied by vertical pulsations. Now a flapping bird propels itself by beating its wings up and down against inert air and the flexible rear edge of the wing gives propulsion: it is easy to see that the result is similar if the wing is inert and the waves beat against it. By this theory the fore part of the wing acts as a gliding plane and the rear portion as a propellor. By the energy thus used the gliding angle is restored to the horizontal. I feel personally that the latter theory of wind propulsion is somewhat discounted by the absence of wing movements in soaring birds, while the former theory of utilising a horizontal wind suffers somewhat (but is not entirely negatived by) the absence of soaring birds in temperate climates. But both theories are mathematically possible.

The Possibilities of Imitation of Soaring Birds.

Natural conditions appear therefore to afford us hope, but we don't really know much about these conditions. When we observe birds we don't know if they are trying to gain height or to lose it, when they circle it may be that they are looking for food, or doing it for company. Imagine a bird looking at us and trying to find out how to walk by watching us, (*a*) when walking in a crowded street, (*b*) when making love in Kensington Gardens, (*c*) when watching a housebreaker picking away at a wall, (*d*) when doing open air dancing. Until we can go, and see, and feel, what the conditions are we shall never know how to utilise them, and as I have explained above the aeroplane is not a suitable vehicle—we must go and see in a glider and a very efficient one at that.

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Let me dwell a moment on this efficiency. Turn back to our picture of a glider falling through rising air and imagine that we want to keep off the ground as long as possible. We can't alter the air: we've got to take that as it comes. We can reduce the speed by loading our glider very lightly but we don't want to. We don't want to make large flimsy structures—they are very undesirable from an engineering point of view and we have had 3 fatal accidents (1 German, 1 French and 1 R.A.F. officer) in the last 3 months owing to gliders breaking up. Also we want to go fast to get about in the air. A speed of 20 m.p.h. is no good to us for we may want to go up wind against a 30 m.p.h. wind. The only factor therefore left for improvement is the gliding angle.

It is natural to turn to birds and see how we differ from them and what hints we can get from them to improve our gliding angle and incidentally our control.

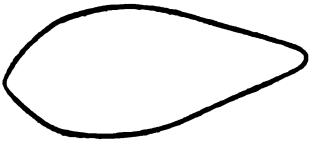
(*i*) In figure 5 I show you a most important item, namely, the best "streamline" shape. Look at this squat and dumpy shaped body and this long slim one. 9 people out of 10 would certainly say that this slim one would offer the least resistance to travel through the air; it is surprising to find that its resistance is three times *greater* than the dumpy one. The reason for this is quite logical. Air is an elastic and practically incompressible medium, so that when we part it by forcing a body through it it tries to come together again; and if the tail end of our body is correctly shaped a great deal of the power lost in parting the air is returned by the squeezing action which forces the body forward. I will illustrate this by forcing an orange pip between my finger and thumb; you will see that as the maximum diameter is passed that pip is shot violently forward. The same result does not follow if you substitute a ball room pencil for the pip. The picture of the bird's wing and an aeroplane wing shows you how much more nearly the former approaches the ideal shape.

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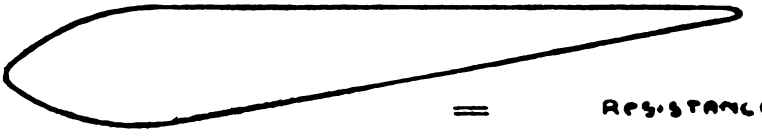
Fig 5



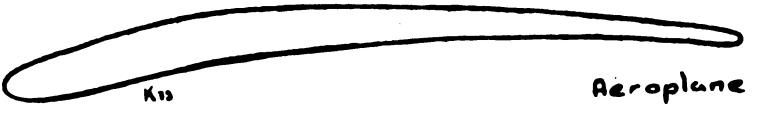
Eagle Wing



= Resistance x

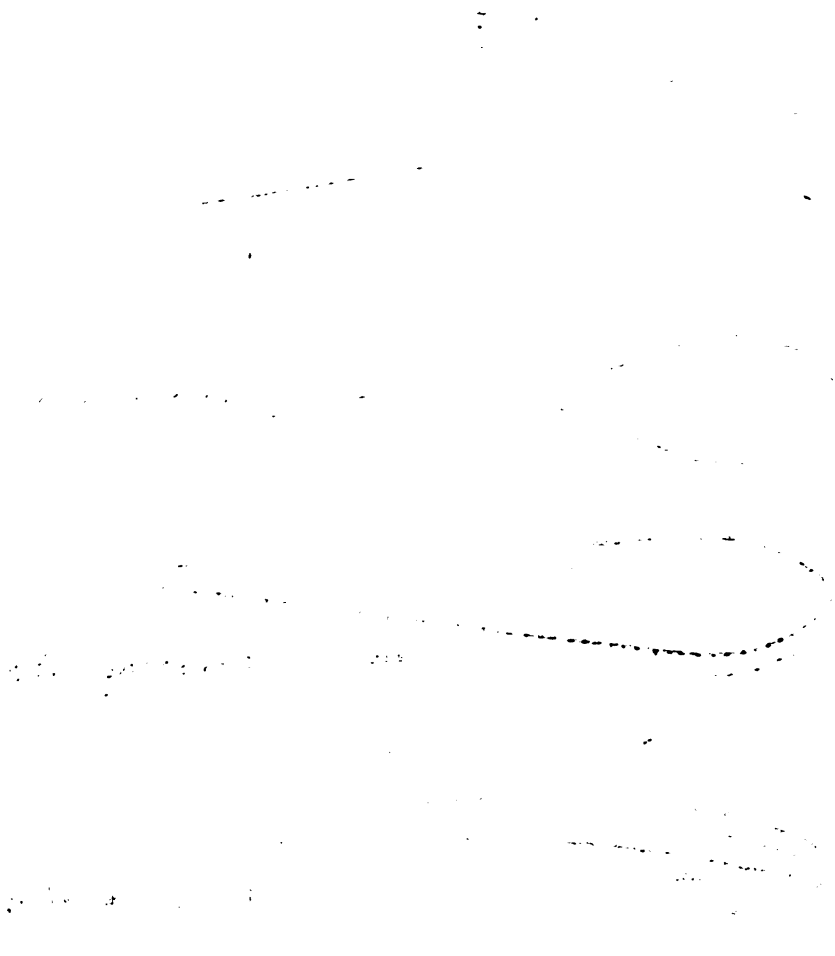


= Resistance 3 x



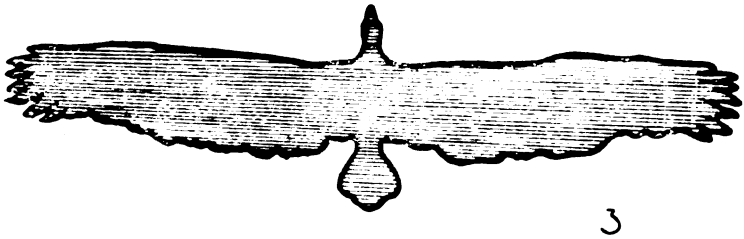
Aeroplane Wing

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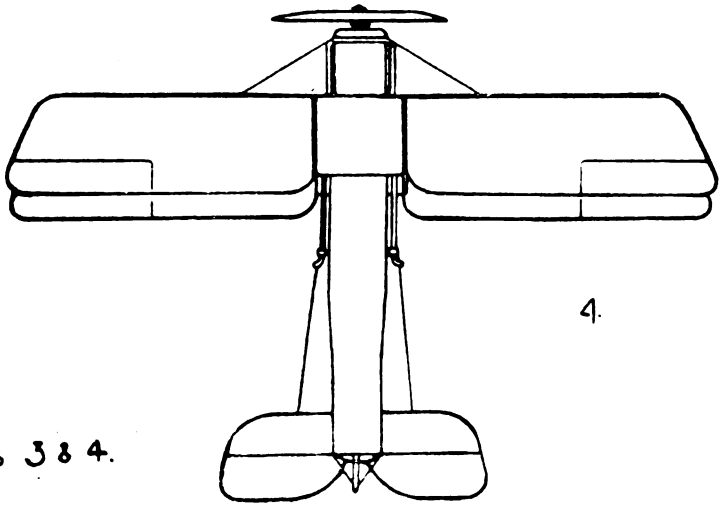


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Fig 6



3



4.

Diagrams 3 & 4.

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(*ii*) In an aeroplane we require a long and large tail to enable us to maintain our stability fore and aft: with anything smaller or shorter we find it difficult to compensate for movements of the centre of pressure. The soaring bird is fully as stable with a very short tail often furled and not as shown in the sketch and hardly loses an atom of stability if you shoot its tail feathers all away. Why is this? We do not know. Perhaps the wing section employed has a very stable centre of pressure but we can't be sure. Meanwhile out long tail means big strains, extra weight and general trouble all round; *e.g.*, you can see at a glance how nearly the bird's body approaches an ideal form as compared with the aeroplane body.

(*ii*) Similarly in an aeroplane we steer by a large rudder at the end of a long tail; it is quite certain that the bird does *not*. It steers very well with no tail at all and often seems to turn it in the opposite direction to what we would expect if it were an aeroplane rudder. The bird steers with its wing tips.

(*iv*) We don't quite know what a bird does do with its tail. It may be connected in some way to the muscles which control the form and flexing of the wings or it may not. One thing is quite certain, if a bird jerks its tail up its flight becomes more steep downwards; in an aeroplane the effect is exactly the opposite.

(*v*) A bird has very flexible wings—very strong in front and very wavy and flexible behind. In an aeroplane wing we make it stiff throughout and have to take it extra strong and extra heavy in consequence. Why is a bird made like this? It may be only because it has to flap sometimes but as soaring birds do not in fact flap for ½ of 1% of their time in the air, we cannot believe that it can be a handicap for soaring. The wings too are flexible along their length, and the ends bend sharply up with outspread feathers—does

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this help them to glide in any way. Do the turned up and outspread wing tips reduce the end eddies which occur at an aeroplane wing tip? On the face of it we might expect flexibility to mean efficiency. A stiff shape will, on the other hand cause eddies and turbulence at the rear edge and these are signs of loss of energy. We know that at certain big angles of the wings to the wind in aeroplanes this turbulence does occur and we call it the critical angle and find it a great nuisance. Is the flexible shape of the bird's wing better in this respect? does it permit the air to leave the wing smoothly pushing it forward and does it postpone or abolish the critical angle? we don't know.

(*v*) All good soaring birds have a well marked roughness on the under side of the wing; this roughness consists (*a*) of a marked ridge or bone near the forward edge and (*b*) by the standing out of the wing quills on the under side The top side is however, smoothly polished. Flapping birds like the owl are smooth both above and below. Why is this? Nature does not leave things to chance; there must be a reason. Now the lifting reaction of an aeroplane wing is due to the difference in speed of air over its upper and lower surfaces, speeded up over the upper surface and delayed over the lower. Isn't it possible that these ridges are so arranged as to slow up the air on the lower side of the wing still further, and that it would pay us to follow suit?

(*vii*) Incidentally on our ordinary aeroplane wing the distribution of pressure is like this picture. (Fig. 7.) It may be that the ridge I have referred to will fill up this bad little dip in pressure on the lower wing which is well marked in all our plane wing sections. Note also how little of the pressure is borne on the last $\frac{1}{2}$ or $\frac{1}{3}$ of the wing; this makes us think we shouldn't lose much actual lift if we made it very flexible and we might gain in decreased resistance.

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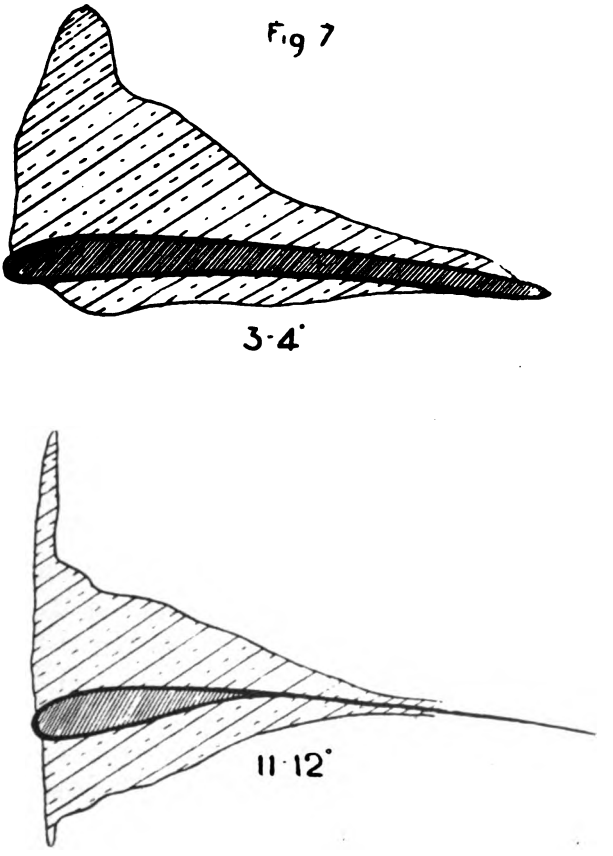


Diagram :—Distribution of Pressure on an Aeroplane Wing.

K. 1923.

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I must not however forget to do justice to a small band of enthusiasts who have tried to imitate natural flight. Hugo Etrich, of Vienna, who invented the Taube type used in the war, was one of these, as was Captain Dunne in England, but possibly Mr. Jose Weiss, of our own country made more progress (between 1907—1910) than anyone in the imitation of the soaring bird. He made over 200 models, and attained some extraordinary results, some of them with pilot on board; the invention of the light aero engine stopped his researches since it diverted support to the new craze.

Conclusion.

Omitting certain complications like furling wings which it may not be possible to reproduce mechanically, we may by experiment and imitation of the bird in some, or perhaps all, of these ways, attain a greatly decreased resistance which means a greatly improved gliding angle. Some people believe a gliding bird has an angle of glide better than 1 in 50—suppose we get 1 in 36 then my sketch will show you that we can glide at 72 m.p.h. with a 2 m.p.h. up current; if we get 1 in 48 we can glide at 96 m.p.h. in a smilar up current! Not only is this speed important in itself but we can carry as so much greater load. A 3 or 4 seater glider of reasonable size becomes at once a possibility. If conditions are what we expect we would find ourselves able to glide upward or down without expenditure of power anywhere in tropical climates, and if we find we can use the turbulence of the wind we shall be able to do almost the same thing in temperate climates. Isn't that romance for you? think of the immence possibilities—only an engine to get off with—very little expenditure of petrol (which for a 3 hours' flight in a modern 2 seater equals in weight the whole of the useful load). Think of the immense commercial possibilities—here is something to enthuse over—we may be on the fringe of far-reaching discoveries and it is only by gliding that we can step forward towards them.

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THE CROSSING OF THE CANAL DU NORD BY THE FIRST ARMY, 27th SEPTEMBER 1918.

By Major-General Sir W. H. Anderson, K.C.B. (late Major-General, General Staff, First Army).

The operations of the First Army in the battle which I propose to discuss are of tactical interest, in view of the successful forcing of the Canal du Nord in the face of an enemy in position.

The co-operation of artillery, engineers, machine guns, infantry, tanks, aeroplanes, smoke and gas make it a typical example of a modern battle at the end of 1918, on the Western Front.

2. General Situation.

I will first briefly recall to you the general situation of the five British armies in France during the last 100 days in 1918, flanked on the right by General Debeney's First French Army, and on the left by the French and Belgians under the King of the Belgians.

By the Battle of Amiens (8th August) the Fourth Army disengaged that town, until then within range of the German guns, and freed the Paris-Amiens railway.

Then the Third Army attacked on the Ancre on 21st August, and gained the line of the 26th August, morning.

The First Army attacked on 26th August east of Arras, the Canadian Corps south of the Scarpe River, supported by the VIIIth Corps north of the river.

On 2nd September the Quéant-Drocourt line was broken and the enemy was forced back on to the outer defences of the Hindenburg line.

After the capture of the Quéant-Drocourt line, the Canadian, and part of the XIIth Corps, south of the Scarpe, advanced close up to the line of the Canal du Nord, reaching the line of the 27th September—the morning of the battle I am going to deal with.

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3. Situation on First Army Front—September.

During September communications were improved, dumps formed, and all necessary preparations carried out for an early resumption of operations, including reconnaissance for crossing over the Canal du Nord and the Sensée Canal.

Position of First Army: South of Scarpe—North of Scarpe.

On the 7th September the Army Commander received the orders of the Commander-in-Chief to take such action on the army front north of the Scarpe as would lead the enemy to anticipate attack on a large scale on this front and to draw off reserves from the main scene of operations south of that river.

Orders were accordingly issued to the troops north of the Scarpe to prepare for attack on a large scale. Tanks and infantry were trained in co-operations in localities where they could be observed by hostile planes, additional balloons were put up, reconnaissance of the whole front between the Scarpe and the La Bassée Canal was carried out by officers of the Cavalry Corps and Tank Corps, artillery registration was carried out by single guns and sections in advanced positions, wire cutting and patrolling were carried out systematically, forward dumps were formed and additional casualty clearing stations were erected, everything being done to give the Germans the impression of impending attack.

Our own troops soon suspected that the attack was only camouflage, and the operations were therefore "postponed;" but Corps Commanders were instructed to carry out minor operations on their fronts, and do everything to keep up the deception.

The enemy showed his nervousness by raids and patrolling and by constant concentration of gas on our forming-up places; he withdrew his guns to extreme range and reinforced the front north of the Scarpe by three divisions, neglecting the danger of attack south of the river, and allowing himself to be in great part surprised by the attack on the Canal du Nord, when it came on the 27th September.

Preparations for this attack were pushed forward, and definite orders for the operation were issued to corps by the First Army on 18th September.

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G.H.Q. Orders.

On the 22nd September orders were issued by G.H.Q. for—

(*a*) *The First Army* to attack on Z day; to capture the heights of Bourlon Wood and secure its left flank on the Sensée River, and operate so as to protect the left of the Third Army.

(*b*) *The Third Army* to attack on Z day in co-operation with the First Army, and operate so as to be in a position to co-operate closely with the Fourth Army on Z + 2 day.

(*c*) *The Second Army* and the French and Belgians to attack in the North on 28th September.

(*d*) *The Fourth Army*, protected on its right flank by the First French Army, to deliver the main attack against the Hindenburg Line on Z + 2 day.

* * * * *

Preliminary Moves and Dispositions.

On the 25th September Z day was fixed for the 27th September.

During the 25th and 26th the Canadian Corps (which included the 11th Division) concentrated south of the Arras Cambrai Road; the 2nd Canadian Division, which still then had been holding the crops front, was relieved by the leading brigades of the 4th Canadian Division, 1st Canadian Division, and 11th Division, and went into corps reserve. 24 tanks (7th Battalion) moved up to their assembly positions west of the Canal. The 56th Division relieved the Canadian Corps north of the Arras-Cambrai Road.

The First Army then had in the line nine divisions (4th Canadian, 1st Canadian, 11th, 56th, 4th, 51st, 8th, 20th, 24th). In support, 3rd Canadian Division. In reserve, four divisions (2nd Canadian, 49th, 66th, 47th) and 1st Cavalry Brigade. Total, 14 divisions.

Dispositions of the Enemy.

The enemy's dispositions opposite First Army were as follows:—

In the line—

(*a*) Between Inchy and the Sensée Canal—three divisions.

(*b*) North of Sensée Canal—10 divisions.

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In reserve—

(*a*) Immediately behind front of attack—two divisions.

(*b*) South of or astride the Sensée Canal—three divisions.

(*c*) Near Douai—at least three divisions.

Of the 21 German divisions facing the First Army therefore 13 were immediately disposed to meet attack north of the Sensée Canal, and only eight (three in the line and five in reserve) were immediately available opposite the real front of attack.

4. CONSIDERATION OF THE OPERATION TO BE CARRIED OUT.

The object of the First Army, as laid down by G.H.Q., was to capture the Bourlon Wood heights, and then to secure its left flank on the Sensée River, and operate so as to protect the left of the Third Army. That meant crossing the Canal du Nord.

But the Canal du Nord was not a completed waterway—the war had interrupted the work in progress in 1914. It averaged about 100 ft. in width, with banks varying up to 15 ft. in height, and heavily wired. Between Lock 3 and Palluel it had an average depth of 8 ft. of water, with breaks of shallow mud and water. And the Agache, a sluggish, marshy stream, lined with willows, runs parallel to the canal, and some 300—500 yds. east of it, forming, with the marshy ground on each side, an additional obstacle to passage, with cover for machine guns.

Between Lock 3 and Mœuvrès it was dry, except for occasional shallow pools, and a crossing could be effected by infantry without bridging. Some 200 yds. of the feasible crossing front at Mœuvres were handed over to the Third Army on our right shortly before the day of attack, so as to enable their left to attack, behind (north of) the wire of the Hindenburg support line.

On this narrow front the approaches on both sides of the canal were dry and firm, and on the west side they had the further advantage that they were fairly well concealed by remains of houses, enclosures and hedges, so that it was possible to assemble troops close up to the canal.

North of Sains-les-Marquion the ground on each side of the canal is marshy and presented great difficulties for bridging or for approaches for wheeled traffic.

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North of the Arras-Cambrai road, the ground on the western bank is bare and open to view from the eastern bank as far west as the Dury ridge, some 3 miles in rear.

All these facts led to the selection of the Mœuvres-Lock 3 front, some 2,700 yds., or about 1½ miles, for the actual attack on the canal.

Active patrolling and ostentatious wire-cutting had been carried out on the front astride the Arras-Cambrai road, and between the road and Palluel, so as to lead the enemy to expect attack on that front. In this we were helped by the enemy's firm belief in the fondness of the British Army for frontal attacks on impassable obstacles.

The fact had to be faced that opposite Inchy the ground rises on the east of the canal for a distance of some 2,000 yds. by a gentle open slope to Quarry Wood and the Marquion defence line. Behind this a slight depression leads to Bourlon village, and then again rises to the high ground crowned by Bourlon Wood.

The attack in its first stages therefore would be exposed to direct and close fire from the Marquion defences, and under observation from the high ground at Bourlon Wood. But at the same time its progress could be observed from the high ground behind Inchy, definite objectives, such as the Marquion line, could be fixed as stages, and support by artillery was facilitated, and the ground was suitable for tanks. Perhaps the chief advantage was that the time to launch the reserves necessary to carry out the fanning-out movement on the far side of the canal could be gauged by Commanders by direct observation of the progress of the fight.

This fan out must obviously be very considerable: the first phase of the day's operations, the capture of the line from Fontaine-Notre Dame to the railway crossing over the canal extended the front to 9,000 yds. (5 miles), exploitation of success would still further extend the frontage, and the actual line eventually held on the evening of attack was 15,000 yds. long (9 miles)—no easy operation in the face of a determined enemy.

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Plan of Attack.

The Canadian Corps were to attack with the 4th Canadian Division on right and 1st Canadian Division on left, and force the canal line between the northern end of Mœuvres and Lock 3.

4th Canadian Division to take Bourlon village and wood, and the line from Fontaine-Notre Dame (excl.) to Copse 500 yds. south of the Arras-Cambrai road.

1st Canadian Division to take Sains-les-Marquion and extend the line of the 4th Canadian Division on the north as far as Sauchicourt Farm.

The 3rd Canadian Division and 11th Division were to follow behind the 4th and 1st Canadian Divisions, and the four divisions were to reorganise on the captured line, so as to exploit success on a four-division front in order from the right—3rd Canadian, 4th Canadian, 1st Canadian, 11th Division. In this order they would advance to capture the Marcoing line and Raillencourt, Haynecourt, Epinoy and Oisy-le-Verger.

The XXIInd Corps were to assist the operations of the Canadian Corps—

(1) by engaging hostile artillery north of the line Sauchy-Lestrée-Epinoy;

(2) by bombardment with gas and smoke of Oisy-le Verger, Palluel and crossings over the Sensée Canal between Palluel and Aubencheul-au-Bac;

(3) by engaging the enemy holding the Canal du Nord between Sauchy Lestrée and Palluel so as to deceive him as to the initial front of attack;

(4) by pushing the 169th Brigade, 56th Division (a weak brigade of not more than 1,600 men) across the canal, north of the Arras-Cambrai road, as soon as the withdrawal of the enemy in front of the 1st Canadian Division enabled them to throw bridges. This brigade was to turn northward and move in line with the attack of the 11th Division clearing up the low-lying marshy fields between the canal and the Marquion line.

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The VIIIth and XXIInd Corps to carry out such minor operations on the day of attack north of the Scarpe as could be completed with the troops then in line, without entailing relief.

Artillery Support.

The strength of the artillery supporting the attack was as follows:—

	Ordnance.	XXIInd Corps.	Canadian Corps.	Total.
R.A.	18-pr.	282	396	678
	4·5in. How.	94	132	226
	60-pr.	30	60	90
	6-in. How.	80	142	222
	8-in. How.	30	18	48
	9·2-in. How.	16	34	50
	6-in. Gun.	4	16	20
	9·2-in. Gun.	3	1	4
	12-in. Gun.	1	...	1
	14-in. Gun.	1	...	1
	12-in. How.	2	4	6
	15-in. How.	...	1	1
				1,347 pieces.

The actual distribution of the fire of these guns is best shown by the barrage maps of the Canadian and XXIInd Corps (not reproduced).

Superimposed on the first portion of the artillery barrage on the Canadian Corps front was a machine gun barrage by 20 M. G. batteries.

In order to protect the left flank of the attack during its crossing over the canal and its subsequent extension to the north, two separate field artillery barrages were to be put down by the XXIInd Corps on the enemy's organisations east of the canal between Sauchy Lestrée and Oisy-le-Verger.

Barrage I. (four Brigades R.F.A.), starting at zero, dwelt for ten minutes on the west bank of the canal, and then crept forward at 100 yds. in two minutes until it passed over the rear defences

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of the Marquion line and then rolled backwards and forwards over these defences at 100 yds. in four minutes until finally creeping back to its starting point by Z+510 (8½ hours).

Barrage II. (three Brigades R.F.A.) was to come down at zero on the back of the Marquion line (farthest east of the former). It was to dwell ten minutes on this line, and then roll backwards and forwards at 100 yds. in four minutes over a further depth of 1 500—2,000 yds. till Z+510 (8½ hours).

This barrage included Oisy-le-Verger and the bare slopes behind the crest of the ridge across which any German reinforcements must advance to reach the Marquion line.

Both these barrages fired one round smoke in 12 to add to the uncertainty of the enemy regarding the situation farther south.

The heavy artillery was to bombard various strong points on the Marquion line within the zone swept by the field artillery barrages, and to neutralise hostile batteries firing on the area of attack.

The crossings over the Sensée between Aubencheul and Palluel were kept under fire by two batteries (one 6-in. and one 60-pr.) to prevent the enemy crossing the river, and Palluel and Bois de Quesnoy were shelled with gas.

R.A.F.

The 1st Brigade R.A.F. were to bomb crossings over the Sensée between Palluel and Wasnes, and the roads behind the Marquion line, and also railway stations at Douai, Liebercourt, Dechy, and Cambrai.

5. Narrative of Attack.

The attack of the 27th September began with a minor operation carried out at midnight by the 8th and 20th Divisions (VIIIth Corps) near Arleux (in front of the Vimy Ridge), with a view to diverting attention from the point of the real attack, and to delay the movement of reserves. This was completely successful—Arleux was taken, and the enemy's front system for some 2,000 yds. north of the village to a depth of some 500 yds.

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Shortly after dawn a Chinese attack was made by the 51st and 8th Divisions on the Scarpe-Oppy front with a view to simulating an extension of the Arleux attack. A creeping barrage was put down and dummis were raised on the parapets in the early morning light.

The main attack opened at 5·20 A.M. with an intense bombardment of all natures, not only on the canal front, but along the Sensée and north of the Scarpe as far as Oppy and against the Lens defences. Intermittent bombardments and barrages were put down at various points along the army front during the day to increase the doubt as to the real front of attack.

1st Phase—1st Objective.

As soon as the bombardment commenced, the 1st and 4th Canadian Divisions, who had formed up some 400—600 yds. from the west bank of the canal, rushed the canal on the Mœuvres-Lock 3 front, carrying with them the enemy posts west of the canal, and under cover of the barrage quickly carried the trenches and rifle pits lying some 200—500 yds. beyond it.

At zero + 33′ (5·53) the box barrage on the left flank began to move northwards and the 1st Canadian Division turned and forced its way into Sains-les-Marquion.

So far, the enemy had been overwhelmed by the suddenness and impetuosity of the attack, but further advance up the bare slopes leading to the Marquion line met with stubborn resistance from rifle and machine gun fire. The advance of the 4th Canadian Division was checked by the enemy holding the fortified quarries of the Quarry Wood. But tanks had followed hard on the heels of the infantry, crossing the obstacle of the canal bed with little difficulty, and with their aid the Germans in the quarries and the wood were surrounded and captured, and by 7·30 (Z + 140) the Marquion line up to Keith Wood (Red objective) was in our hands.

The hostile artillery had been weak. At first it had been concentrated on our battery areas, but had soon shifted on to the line of the Canal du Nord. Their fire was mainly directed, however, on to the crossings at Marquion on the main Arras-Cambrai road, and north of that village, and consequently clear

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as yet of any attempted passage by our troops. About 8 A.M. this shelling almost died down, and it was obvious that the enemy was withdrawing his guns.

Meanwhile the leading brigades of the 3rd Canadian and 11th Divisions had moved up behind the 4th and 1st Canadian Divisions from their assembly positions west of the canal, in readiness to cross.

2nd Objective.

After a pause varying from 43 minutes on the right to 100 minutes on the left, the barrage moved on from the Red line, and the attack continued on Bourlon village, and the ridge running thence north-north-west to the east of Marquion (Green objective).

The 4th Canadian Division thus commenced the advance a little ahead of the 1st Canadian Division on its left, and the 1st Canadian extending its left in a convex line, its right brigade attacking north-east and its left brigade north-north-east and paralled to the canal.

On the right the 4th Canadian Division had hard fighting in Bourlon village, where machine gun nests and groups of riflemen fought stoutly amid the ruins. Here again tanks came to the assistance of the infantry and the attack swept on to the western edge of the wood.

On the left the 1st Canadian Division captured the Marquion line as far north as the village and the village itself. On the Green line—the two divisions halted for some 40 minutes at the foot of the final slope of the ridge while the 3rd Canadian and 11th Divisions crossed the canal and moved into position with their heads on the general line Quarry Wood-Keith Wood. The leading brigade (34th) of the 11th Division came under fire from riflemen in Marquion and the marshes south of it, who had been passed over by the 1st Canadian Division. These men, with their retreat cut off by our advance, resisted stoutly, and were all killed or captured.

Following the 3rd Canadian and 11th Divisions came the field artillery batteries which were to cover the advance beyond the Green objective, and which crossed the canal at dry crossings rapidly improved east of Inchy.

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3rd Objective.

Punctually according to programme at 10 A.M. in the centre, 10-30 on the extreme right, 10-40 on the extreme left, as worked out on the barrage map, the 4th and 1st Canadian Divisions pushed on for the next objective (Blue line).

The 4th Canadian Division was faced by Bourlon Wood, and, south of it, by the northern trenches of the Cantaing line, a southerly extension of the Marquion line. South of the First Army, this line was an object of attack for the Third Army, and the advance of the right of 4th Canadian Division south of Bourlon Wood was, th refore, synchronised with that of the 57th Division XVIIth Corps, Third Army. The bulk of the 4th Canadian Division attack passed north of Bourlon Wood, and its advance behind the barrager reached the eastern edge of the wood, behind the Cantaing line, at the same time as the Third Army attack (somewhat delayed by hostile gas) developed against Anneux. This co-operation materially assisted in the capture of the village and trenches.

Bourlon Wood itself was not entered by our infantry in the advance. It had been systematically shelled with mustard g s by the Third Army from the 17th to 24th September with captured German guns and ammunition. The success of this action was seen later when the wood was entered, abandoned German guns testifying to its occupation and the effective nature of the gas bombardment.

On the left the 1st Canadian Division cleared the crest of the ridge between Bourlon Wood and Sauchicourt Farm without much difficulty, the chief opposition encountered coming from machine guns and riflemen in the small copses dotting the plain.

By 12 30 the Blue line was in our possession and the first phase of the attack was completed.

The front of attack had now increased from 2,500 yds. to 9,000 yds., but had not included the canal north of Marquion, or the defences on the ridge between Sauchicourt Farm and Oisy-le-Verger. The artillery measures which had been taken to safeguard this exposed left flank have already been referred to. But the

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wind, fresh from S.W. to W.N.W., had been favourable, and, in addition, the whole front of the XXIInd Corps along the Sensée River and the Trinquis Brook had been subjected during the morning to a smoke bombardment by artillery, smoke bombs projected by the special companies R. E., and smoke clouds from captured German drums.

The heights of Oisy-le-Verger and north of the Sensée had been effectually screened.

Second Phase.

The 3rd Canadian and 11th Division had been moving forward, and the 11th Division now came up on the outer flank of the 1st Canadian Division, which simultaneously closed inwards.

The 169th Infantry Brigade (56th Division) had also crossed the canal at Marquion, and relieved all Canadian troops between Sauchicourt Farm and the canal. In this movement the brigade had encountered small parties of the enemy still holding out in the enclosures north of Marquion, but, driving them out, was ready for the general advance at 3 P.M. At this hour the attack recommenced.

Attack of Canadian Divisions and Right Brigade, 11th Division.

The advance of the Canadian Divisions and of the Right Brigade of the 11th Division was supported by field artillery which had been moved across the canal, acting on the lines of open warfare. A heavy artillery barrage from guns west of the canal supported this part of the attack, the guns lifting from definite lines at fixed times previously notified.

On the extreme right, the 11th Brigade, 4th Canadian Division, was met by heavy rifle and machine gun fire from Fontaine Village, and made little progress. On its right the 57th Division (XVIIth Corps Third Army) was still fighting in the Cantaing line, moving towards Fontaine, and till this village was taken further advance on the right flank of the First Army was inadvisable.

After dark the 3rd Canadian Division took over the 11th Brigade front.

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The 12th Brigade, 4th Canadian Division, had a difficult task in advancing down the bare slopes towards Raillencourt and the Marcoing line in the face of machine gun and rifle fire, and its attack was checked by a counter-attack by the Guards Reserve Division. This Brigade, too, made little progress.

The 1st Canadian Division advanced another 3 miles with less difficulty, captured Haynecourt, and passing through several belts of enemy wire, established itself on the Cambrai-Douai road. This division had advanced 11,000 yds. (6¼ miles), fighting all day.

The 11th Division attacked north-east and north with two brigades on a diverging front. The brigades forced their way through a thick wire entanglement running east and west between the Marquion and Marcoing lines, and the right brigade captured Epinoy.

Attack of 169th Brigade and Left Brigade, 11th Division.

The Left Brigade, 11th Division, advanced north behind the Marquion line against the commanding Oisy-le-Verger position and village, and its attack was co-ordinated with that of the 169th Brigade, 56th Division, which attacked parallel to the canal, and between it and the Marquion line. Both brigades attacked behind a barrage, differing in this from the attacks further south. These two attacks are therefore best considered together.

Both attacks started simultaneously at 3 o'clock, but the 169th Brigade advanced at 100 yds. in eight minutes, so as to clear out thoroughly the enclosed fields and copses in the low ground by the canal while the Left Brigade, 11th Division, advanced at 100 yds in four minutes. The 11th Division was, therefore, soon échelonned well ahead of the 169th Brigade, threatening the retreat to the east of the garrison of the Marquion line and Sauchy Lestrée.

The 169th Brigade found considerable numbers of the enemy who had been trapped between the 11th Division and the canal; confused by the continuous barrages of smoke, H. E., and shrapnel which had been rolling backwards and forwards behind them, but these put up a good fight. The brigade captured Sauchy Lestrée, Sauchy Cauchy, and Cemetery Wood; and then, quickening their pace, came up in line with the left brigade of the 11th Division

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which had halted for half-an-hour while the artillery searched and swept over the Oisy-le-Verger Village and rear. Oisy-le-Verger was captured, and at dusk the 11th Divison line ran from the Douai-Cambrai road east of Epinoy, where they were in touch with the 1st Canadian Division, in front of strong wire entanglements outside Aubencheul-au-Bac, to the edge of Bois de Quesnoy, close up to the banks of the Sensée Canal. Their advance, starting on a front of a mile, had ended on a 3½ mile front, and the division had captured some 700 prisoners and 40 guns.

The 169th Brigade, after stiff fighting in the marshes, had captured 500 prisoners, and reached the sunken road between Oisy-le-Verger and the canal. They were in touch with the 11th Division on the south edge of Bois de Quesnoy, which was not entered, as we had filled it with gas. On the west of the canal patrols from the other two brigades of the 56th Division had pushed forward to the Palluel Marshes, but were unable to enter Palluel owing to machine gun fire.

4th Division.

Further west again the 4th Division established a small bridge-head across the Trinquis Brook west of Sailly-en-Ostravent in the face of considerable opposition.

Work of R.E.

A vital factor in the success of the day had been the work of the Engineers in bridging the canal. The success of all subsequent operations was dependent on the rapidity with which communications across the Canal du Nord could be established. All preparations for the necessary bridges had been considered beforehand, plans prepared and dumps made, and on the evening of the day before the battle 145 tons of bridging material, loaded on lorries, were ready to move to the canal.

As soon as the leading troops cleared eastern bank in the early morning, the work of cutting ramps for dry crossings and the laying of bridges was begun, the men working in some cases under machine gun fire. By the evening numerous trestle and pontoon bridges, infantry bridges and dry crossings had been completed. The construction of heavy bridges had also begun and was completed on the 28th.

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Results of the Day's Fighting.

As a result of the day's fighting the First Army had forced the Canal du Nord on the whole front from Mœuvre to Palluel had captured two powerful systems of entrenchments (Canal line and Marquion line), and the important tactical positions of Bourlon Wood and Oisy-le-Verger, and the ridge between these. Our line had advanced 5 miles on a front of nearly 9 miles, and a favourable position had been gained for future operations on Cambrai and the Escaut, securing the left flank of the Third Army, which had also had notable success on our right.

6. Operations of 28th September.

During the evening and night 27-28th September the bulk of the Canadian Corps field artillery and a large portion of the heavy artillery crossed the canal and moved into position to support the further advance, which was resumed at 6 A.M. on the 28th September.

The 3rd Canadian Division, in conjunction with the 57th Division Third Army on their right, captured Fontaine-Notre-Dame, and with the 4th Canadian Division on their left captured the Marcoing line as far north as the Cambrai-Douai road, the 4th Canadian Division also seizing Raillencourt and Sailly.

The 1st Canadian Division, which was well in front, did not advance, but the 11th Division advanced into the south-western outskirts of Aubencheul-au-Bac, and on their left worked down to the Sensée Canal and joined hands with the 56th Division north of the Bois de Quesnoy. The 56th Division pushed through Palluel and established posts on the Sensée.

7. Results of the Battle.

During the day several hundred more prisoners and many guns were captured, bringing the First Army total since daybreak on the 27th to nearly 5,000 prisoners and 150 guns.

The three German divisions in the line on the morning of the 27th had been completely routed, two reinforcing divisions had been badly mauled, and two further divisions were found to have been moved up for the fighting of the 28th.

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Reinforcements coming from east of Cambrai and from near Douai had been harassed and delayed by the action of the R.A.F. and the heavy artillery on railway stations, roads and river crossings.

On our right the Third Army had had further successes.

Here the Canal du Nord battle may be said to end, and fighting merges into the operations for the capture of Cambrai.

The attack of the Second Army and French and Belgian troops in the north on this day was entirely successful, and the tale of victory was taken up on the 29th by the Fourth Army in the final breaking of the Hindenburg line.

Casualties.

It may be imagined from the narrative that there was no fight left in the Germans, and that the operations were of the nature of a walk over. Far from it; the First Army casualties are sufficient answer to that. In the fighting for the Canal du Nord, and the advance on Cambrai (up to 8th October) they were as follows—the great bulk being Canadian troops :—

Killed,	172 officers,	2,328 other ranks.
Wounded,	547 Officers,	10,184 other ranks.
Missing,	9 officers,	265 other ranks.
Total	728 officers,	12,777 other ranks.

8. Reasons for Success.

To what then can we ascribe our success in this difficult operation? I think the main factors of success were first and foremost the superb confidence and matchless fighting spirit of the men in the ranks, and the bravery and fine tactical leading of the regimental officers. In those days it seemed necessary only to order a position to be taken and it was done; there seemed hardly any limit to what could be asked of the troops.

But beyond this there were other factors. The elaborate preparations for attack on the north of the Scarpe—the feints, raids, bombardments, Chinese attacks, and small operations actually carried out—all led to the mystification and misleading

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of the enemy as to the point of attack. To the unselfish co-operation of the divisions of the XXIInd and VIIIth Corps, the Canadian Corps owed much, and their Commanders acknowledged it generously.

The time available for preparations rendered possible elaborate artillery arrangements which worked to perfection. Great as was their material effect, the moral effect of the various barrages and bombardments in bewildering the enemy, especially on the northern flank, was even greater; and the *morale* of the German infantry, already greatly affected by the defeats of August and September, was not proof against the terrible concentration of our artillery, backed up by the steady unwavering assaults of our infantry and tanks, and but poorly countered by their own guns.

Times also was in favour of the Army Corps, Divisional, and Brigade Staffs; and if there were many difficulties to be encountered, it may be fairly said that there were few—very few—which were not foreseen and prepared for.

The German was not the man he was, but that is not to say he was anything but a formidable enemy.

The conformation of the ground enabled direct observation of the progress of the attack. Commanders were able to direct the move forward of reserves without committing troops to action in ignorance of the exact situation; and the artillery were able to observe accurately the advance of the infantry which they were supporting and to engage targets of opportunity.

The successful passage of tanks over the crossings of the canal was an essential part of the operation.

If Lord Horne was anxious about the success of so formidable an undertaking, he knew that he had under his orders Commanders, Staffs and troops who had the habit of victory, and whose skill and knowledge of their work and of each other were the result of much experience and fighting together; intimate co-operation was assured.

Finally, I would pay a tribute to the magnificent fighting qualities of the veteran soldiers of the young army of Canada, on whom fell the great weight of the operations I have described.

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Remarks by General Lord Horne, G.C.B., K.C.M.G., on the above Narrative.

In considering the operations of the First Army during the autumn of 1918 it is necessary to have a clear understanding of the *rôle* of that Army. The strategic plan decided upon the Allied Commanders-in-Chief was: American and French—converging attack on Mézières; British—converging attack on Maubeuge; Belgian and Allied Forces in Flanders—converging attack on Ghent. Sir Douglas Haig's decision was to deliver his main attack with the Fourth and Third Armies, the primary roll of the First Army being to cover the left flank of the Third Army. To carry out efficiently the duty of protecting the left flank of the Third Army it was necessary to attack and dislodge the enemy on that flank. It was made clear to the First Army Commander that the number of divisions and the amount of artillery available for the First Army were limited, that he could expect no increase, and that he must carry out his task as best he could with what he had at his disposal. I mention this in order that it may be understood that it was not from choice but from necessity that the First Army attacks during the period 26th August to 27th September were delivered on so narrow a front and with an exposed flank. It appears to me that two points arise from the lecture upon which criticism is justified, the first being the situation on the left flank. This flank rested, to begin with, on the strongly organised position of the Vimy Ridge, garrisoned lightly enough by the Eighth Corps, none too strong in numbers and strung out on a long front. As operations progressed the flank gradually extended along the line of the River Scarpe, the Trinquis Brook and the Sensée marshes, until at one time (12th October), it attained to some 15 miles. Parallel to this flank, at a distance from enemy positions of from 3 to 6 miles, ran the Arras-Cambrai road, the main line of communication and supply of the First Army. It may fairly be said that such a situation entailed considerable risk, and I admit it; but, as a matter of fact, the risk was not so great as it appears at first sight. The Trinquis Brook and the Sensée marshes—obligingly flooded for us by the Germans—rendered attack in force very difficult. The chief danger was that German guns

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would interfere with the road; but the German Commander was evidently imbued with the idea, in which we encouraged him, that an attack upon him was imminent north of the Scarpe. For his own protection, therefore, he flooded the marshes and withdrew his guns to extreme ranges from the crossings. This left the main road in comparative peace. We on our part employed our artillery in strength in the protection of this flank, carrying on very active counter battery work. I am ready to admit that this flank was a source of anxiety and the provision of troops for its protection added to our difficulties. The second criticism to which I refer is: Was the plan of operations on 27th September sound? Was it sound to base the plan on the passage of six divisions through a bottle neck 1½ miles wide? The objections are obvious—the possibilities of failure with heavy loss evident. Here are the considerations which influenced the adoption of the plan. We had plenty of time to make all preparations. Reconnaissance was thorough and maps correct. The Staffs were efficient and well accustomed to working out plans thoroughly and in detail. The Regimental Officers and N.C.O.s and men knew their job, and *morale* was very high. During the past month every prepared attack had gained at least its second objective. There was every reason to feel confident that with the troops and material at our disposal we should be successful in the first stage and gain the blue line. If, therefore, the advance of the supporting divisions was delayed until plenty of time had been allowed to make sure that the leading divisions were firmly established on the blue line, then the danger of confusion was much reduced. With this object in view it was decided that the second phase should not commence till 3 P.M. Also, experience had proved that, shortly after a successful attack on the first portion of a German fortified system, hostile shelling ceases for a time, whilst guns withdraw to retired positions. The supporting division might reasonably anticipate that they would not be exposed to much shell fire whilst crossing the Canal. Further, the success of the first attack would gradually clear the Canal northwards and enable bridges to be thrown and the number of crossing places increased. Such were the considerations which influenced the plan, and the result justified them.

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It is an axiom that a military operation should be as simple as possible, and the larger the operation the greater the need for simplicity. No one can claim that the operation under consideration was simple—indeed, it might without contradiction be termed complicated—and the fact that it was carried through successfully speaks very highly for the quality of the Staff work in preparation and for the execution by Commanders. The greatest praise is due to the work of all Commanders and Staffs concerned, to their careful consideration of details and to the thoroughness of their preparations and arrangements; and to Regimental Officers, Non-Commissioned Officers and men for the zeal, energy, devotion and self-sacrifice displayed in carrying through the tasks set them. Whilst in no way deducting from the merits of the 11th and 56th Divisions, both of which had very difficult tasks and carried them through right well, I must say a special word for my old friends of the Canadian Corps. For more than two years I was closely associated with them. No one could wish to command better troops. Their Commander Sir Arthur Currie, had brought his corps to a very high stage of efficiency. Their spirit was immense. I think at this time the troops of the First Army looked for success as a matter of course, and considered that no German troops could stand in front of them. I think they were right.

In the study of the Great War it is very desirable that we should not lose our sense of perspective. There is a tendency, a strong tendency, a dangerous tendency, to model our ideas of war on our experiences of four and a half years in France and Belgium, and to allow the ideas thus formed to influence us unduly in our task of reconstituting the British Army. The odour of "trench warfare" is still too strong in our nostrils. We lean to the tactics employed at the close of the war in France and Belgium, forgetting the experiences of the first few weeks there, and of operations in other parts of the world, such as Palestine and Mesopotamia. We must remember that the conditions of four year's war in France and Belgium were abnormal and unique, and are unlikely to occur again—certainly not until both Arimes have failed to force a decision by mobile warfare. Thus, when we study an operation such as this we must realise the extraordinary conditions

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under which it was carried out. An organised battle area, a
quate and safe communications, stupendous artillery, unlimi
ammunition, a vast fleet of aeroplanes with complete mastery
the air, tanks (not many certainly on this occasion, but the ene
had none), gas, smoke, accurate maps, complete knowledge of
hostile position, complicated barrage systems, vast accumulati
of bridging material, with adequate trained personnel, food, wa
etc., a sledge-hammer battle, simplicity of tactics. Where
you ever going to find such conditions again? I mention
this to emphasise my point that in reorganising our small Ar
and in bringing our tactics up to date and in the conduct of
training we must not lose our sense of perspective. We m
clear our minds; we must sit down and think hard. What d
our Army exist for? Certainly not for war on the scale of t
Great War, nor yet for war on what used to be termed "Con
nental scale." It exists primarily to preserve law and ord
throughout the British Empire. It has been said that no d
passes upon which the British Army is not fighting somewhe
or other throughout the Empire. The British Army exists f
small wars, and it is for the small war that we should trai
and for which our armaments, etc., should be adapted. L
us get back to the principles of 1914. Let us train and equi
our Army for "open warfare" in any part of the world. Let
by all means take advantage of the innovations of modern scienc
but let them be adjuncts. Let us realise that we must be read
to fight, and fight effectively, in any part of the world with wh
we have and what we can get there. We cannot except to opera
in "organised battle areas."

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AGE AND EFFICIENCY.

By Lt.-Col. A. B. Beauman, The York and Lancaster Regiment.

Some months ago the Editor of this Journal asked me to write an article likely to lead to discussion in its pages. If this article ever reaches print, this request must serve as its excuse. I know several officers who hold views diametrically opposed to mine on this question, and perhaps they will be tempted to annihilate me.

My thesis is this; the retiring age limits for officers are at present far too high to lead to the maximum of efficiency in war.

Before going further, it must be made clear that no attempt is being made to criticise the existing state of affairs. On the contrary, it is a plea to perpetuate it. The Great War has caused a run of promotion that has brought officers to the various commands at a much earlier age than was possible (except in very exceptional cases) under pre-war conditions. A decade or so of peace will, however, materially alter this and there is bound to be a big increase in the average age for each rank unless the ages for retirement are adjusted on a downward scale. Whenever a long period of peace occurs, the average age for command is bound to rise, until it closely approximates to the retiring age limit in the equivalent rank.

Is this result desirable in the interests of efficiency? An attempt will be made to show that tested by the acid of war experience, the answer is a most emphatic negative.

The efficiency of an army can only be measured by one standard; its efficiency for war. An army exists for fighting; the whole of its peace organisation and training must be based on that idea if it is to achieve anything like perfection as a fighting machine. This may sound platitudinous, but it is a fact that sometimes becomes obscured during long periods of peace.

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During such periods certain conditions are likely to creep in which are perfectly satisfactory as long as peace continues, but which will prove a source of weakness during an exacting campaign. One of these conditions is a set of commanders too old physically for their duties in the field.

We have at the moment, the advantage that we can test all our theories by recent experience in the Great War. In order thoroughly to probe this question, it is necessary to examine in some detail, the tendency produced by a long and exacting campaign in the average age of commanders selected for certain positions. "Average" must be emphasised, because, in covering so large a field any theory could be riddled by exceptional individual cases. But for the purpose of fixing age limits the average man is all that matters.

As the war progressed the average age for commanders in every formation below the Corps steadily decreased. For this there was a very good reason. The Field Armies were gradually finding by the bitter experience of a long drawn out and exacting campaign that the preconceived ideas as to the correct age for such commands was far too high. There were plenty of older men available for each rank. The back areas, bases, and Home Commands were packed with them, but, with comparatively rare exceptions, there was no place for them at the front. It was being proved again and again that the vitality of a man in the prime of his physical powers was necessary to sustain the combination of physical and mental strain that inevitably falls on any commander in advance of a Corps Headquarters in modern war.

It was found that many officers of undoubted ability, who, owing to advancing years, were unduly affected by the strain of active service, could not sustain the mental energy, driving power, and balanced judgment required of a commander in war. The mind cannot give of its best if the body that supports it is unduly devitalised.

It is obviously undesirable to quote individual cases from the late war, but we can find numerous occasions in military history, where an army has been lost owing to the break down in efficient direction at the critical moment directly resulting from

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the physical condition of its commander. At the battle of Marengo the Austrian Army was within an ace of victory. In the earlier stages of the battle the French under Napoleon had been outfought at all points. So much so that Desaix is reported to have said to Napoleon, on being asked his opinion of the situation, "we have already lost one battle. There is time to win another." At one period the French were in full retreat, and it only required a further effort by the Austrians, to turn this retreat into a rout. But at this critical moment the Austrian Commander, a man far too old for command in the field, broke down owing to the heat of the day and a slight wound. He left the battlefield, and as a result of the confusion caused by the change in command, the Austrian effort relaxed. Napoleon, still a young man, his mental and bodily vigour unimpaired by fatigue, seized this opportunity with characteristic energy, and in a short time turned defeat into a victory so complete that it decided the campaign. Had the Austrian Commander been a man of equal physical and mental energy quite irrespective of military talent, the result of the battle would have been very different, for at one time the Austrian Army had victory well within its grasp.

It would be interesting and instructive to work out the average age of the commanders of Battalions *, Brigades and Divisions at the time of the Armistice. The necessary data are not available to the present writer, but by taking an average of those commanders with whom he was acquainted on the Western Front, an approximate result may be obtained, that probably would not be far wrong for the whole of the Field Armies. The following avarage ages will, therefore, be taken for the purpose of this article, though it is freely admitted that the data on which they are based are not as satisfactory as could be desired.

Battalion Commander—35 years.

Brigade Commander—42 years.

Divisional Commander—48 years.

* To avoid superfluous verbiage "battalion" and "battalion commander" is used throughout this article, but exactly the same arguments hold good for command of Cavalry Regiments and batteries of Artillery.

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It will be shown later what a great difference exists between these ages and those permissable for the various commands under the retiring age limits as they exist at present.

As regards higher commands, the question of age is not so vital. A man's physical powers may have passed their zenith owing to advancing years, while his mental powers are still unimpaired. The physical strain on a Corps or higher Commander is comparatively slight in modern war. He can usually be assured of a reasonable amount of sleep and comfort, and it is unlikely that he will be called upon to undergo the long periods of physical strain and bodily discomfort that are inevitable in the lower commands.

We will now examine in detail how our present age limits compare with the average ages found most suitable for active service conditions. As matters stand, a man can obtain regimental command at any age under fifty. He can therefore still be commanding a battalion when over fifty-three. It follows that we may start a campaign with *Battalion* commanders five years older than the average age found most suitable for *Divisional* Commanders in war. The conditions under which battalion commanders live on active service are particularly trying. Long periods of mental strain, acute physical discomfort, and nerve racking danger are inevitable. It is not possible for the average man to support such a burden for any length of time without loss of efficiency at an age which has been found by experience to be too advanced for the far less wearing position of Divisional Commander.

For a Brigade Commander (Colonel) the age is 57, and for a Divisional Commander (Major-General) 62. In each of these ranks the decrease of physical strain is more than counter-balanced by the advance in the retiring age. In each rank the age for retirement is a long way above the age found most suitable for war.

It would not be either practicable or advisable to scale down the age limits to such an extent that Commands would be held in peace by men approximating in age to those holding similar positions at the time of the Armistice. The largely increased

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pension list would effectually torpedo any such scheme under existing conditions, but it is suggested that a moderate scaling down would so increase the war efficiency of the army, that it would amply repay any moderate increase in expenditure. The ages suggested are considerably above those found most suitable for a long campaign. But usually, after the first few months of war, the various commanders of an army either advance to a higher command or fall out from various causes. At the suggested ages the various commanders should be able to work at their maximum efficiency for at least six months. It is for the longer periods of strain that younger men are required.

	Present retiring age.	Most suitable age for rank under war conditions.	Suggested maximum retiring age.
Battalion Commander (Lieut-Col.).	55*	35	46
Brigade Commander (Colonel).	57	42	52
Divisional Commander (Major-General).	62	48	58

It would be necessary to accompany any such reform with a considerable extension of the present system of accelerated promotion, otherwise able officers might be lost to the Service through premature retirement owing to age. This would particularly apply to promotion to command of a battalion.

In conclusion I will quote from a wise and witty book, written by an able and experienced soldier. Being on the retired list, he can deal with such a subject with complete impartiality. The following is quoted from Major-General Callwell's "Reminiscence' of a Dug-out."

"There was one broad principle, the truth of which was brought out very clearly during the course of our British campaigns between 1914 and 1919—the principle that commanders of Brigades and Divisions require to be young and active men."

* As the retiring age for majors is 50, and the tenure of command 4 years, a battalion commander would not normally be over 54. The age given is that laid down in Royal Warrant.

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PRINCIPLES AND METHODS.

A Reply on the Question of Progress in Tactics.

(By Captain B. H. Liddell Hart.)

In a review of my little book—"A Science of Infantry Tactics"—in the October number of this Journal, the question is raised of the dividing line between new and old in the evolution of tactics. It is a subject much debated in the past and so perchance, of general interest to students of Military History. As it can only be determined by the examination of individual cases, I may perhaps be excused for using this particular review as my foundation in an attempt to throw light on the question.

1. In setting forth his views on this problem of the fresh elements in any tactical development, the reviewer is led into a misinterpretation of the purpose of the book which he is discussing. To prevent the spread of a wrong impression in regard to any claims I am supposed to have made, it is desirable that the real and not the alleged purpose of the book be clearly understood.

2. I feel sure that the misinterpretation was unintentional, for it is in contrast to his later comments. When he says that the book "cannot fail to give the student of infantry tactics a clear view of his subject," I could not wish for a better statement or understanding of my real purpose.

3. Again, when he rightly warns the student "to guard against the tendency to regard tactics as an *exact* science, he is but echoing my repeated emphasis, in the book, on the fact that the framework is a flexible one and must be adapted to the actual conditions The analysis and tabulation is designed to explain the relation between the principles of war, and if the student bears in mind the maxim, "When in doubt, hark back to the principles," surely he is less exposed to the pitfalls of formalism than in following any other method—particularly if he understands what relation the principles bear to one another. So long as a

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framework is founded on the *principles* of war which are constant and not on *methods*, which are ever changing, it remains flexible enough to be adapted to particular conditions, just as the steel frame structures of modern Japan have had both strength and elasticity sufficient to withstand the earthquake.

4. In another place, the reviewer deprecates my "divergence from the nomenclature of the various bodies as adopted in the text books." My choice in regard to terms was dictated by the need to avoid unnecessary repetition and possible confusion in the reader's mind. Indeed, if, as the reviewer generously says, my book gives "a clearer view," may it not be partly because I use only two terms to indicate the two tactical parts into which every unit is divided, instead of the 17 terms as in the Amendments to the Official Manual? Incidentally, both my terms, "forward" and "manœuvre" are to be found among the latter, and they do, at least, suggest the actual functions of these bodies—which are similar in nature whether we are dealing with the action of a platoon or a battalion.

5. This preliminary reconnaissance seems to show that the reviewer is substantially in agreement with the thesis of the book. Thus we are left with only one main point of criticism—and that due to a misapprehension of the real purpose of the book—which he is seen to have stated correctly elsewhere.

As a consequence of this mistake, he is drawn into two further errors—firstly, that I "pose as a pioneer of principles;" secondly, that since principles are obviously not new, there is therefore no fresh development—of method—in the book.

6. Now that his centre of resistance has been located and "fixed," I propose, with the indulgence of the reader, to turn its weak flank and then pursue the question as to whether there are any fresh developments in the book.

(a) His criticism is, that—"the basic principles of this 'new' science may be stated in two words, Infiltration and Depth. Captain Hart appears to be under the impression that he is the pioneer of these principles." Actually, I am under no such impression for the simple reason

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that I do not regard these as *principles* at all in the true sense, but as *methods* developed to meet certain conditions.

(*b*) The *principles* on which my science is built are set forth in the tabular diagram. They are similar in sense to those laid down in Field Service Regulations, although slightly different in form because I have endeavoured to tabulate them on the basis of their relative tactical values and to adapt them to infantry conditions. The *principles* in F.S.R. (which are those of Colonel Fuller, *the* pioneer of a science of war) apply to war on the wider scale. By disentangling the real principles from the mass of maxims and catch-words, F.S.R. have, for the first time, brought into light the bedrock principles which have underlaid the fluctuating currents of war from the earliest times downwards. I pretend to no share in this F.S.R. innovation, epoch-making in its promise for the future if its value be properly developed.

Endeavouring, however, like a number of other students of war in recent years, to discover what actually were the real principles, I arrived at a result generally similar to that of the new F.S.R. All that I claim is to have tried to build up the principles into a structure or framework of practical utility, to show how the various phases and forms of infantry tactics fit into it, and to use it as an acid test to determine the soundness of the existing methods or the modifications necessary in them. By the use of such a means of test we can discover and produce the improvements suitable.

If there is any originality, it is purely in the idea of building the principles into a framework to use as an acid test, and in certain improvements of method which have resulted.

(*c*) I am aware that the *methods* of Infiltration and Depth are not of recent origin, although their full importance was not appreciated nor their execution developed—even by the Germans—until the Great War. The germ, indeed, can be found many centuries earlier than 1866 or 1870.

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I certainly made no claim to be the pioneer of them. All that I did, instead of treating them as isolated methods, was to show their relation to the principles and fit them into the general framework so that their value might be exploited without danger of falling into excess.

(*d*) As regards the improvements of method referred to at the end of sub-para. (*b*), I believe that I am justified in claiming an element of originality for the "Expending Torrent" method, the "Fix and Manœuvre" formula in its application to the infantry units, and such ideas among others as that of "Manœuvre to fire" in defence as an alternative to counter-assault, the echelonning of supporting posts, the placing of supports beforehand on a flank ready for counter-attack and the use of a separate and distinct part of the battalion for pursuit.

(*e*) Taking the Expanding Torrent for example, several of the constituents are new and others are old—as in every fresh development, for the path of progress is step by step and not a blind leap in the dark. The germ of every advance in Military Science for centuries can be traced in the history of an earlier age.

Apart from the fresh ingredients, the originality of a method lies in selecting and mixing this amalgam of old and new, and pouring it into a fresh mould. Perhaps I may be forgiven pointing out the difference between the Infiltration or "soft-spot" tactics and the Expanding Torrent method.

The success of the former method at the end of the war rather blinded us to its dangers in face of an able enemy. It tended to make progress in Depth at the expense of widening the breach, to pass on leaving intact centres of resistance in its wake, and to break up the unity of the attacking platoons, companies, etc. The former method of a linear attack aiming at an equal penetration on the whole front of attack, retarded the advance so greatly as to be fatal to success and wasteful of man-power.

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(*f*) The Expanding Torrent endeavours to reconcile the advantages of both and to avoid their respective dangers, steering a course between the Scylla of an advance needless of the flanks and the Charybdis of stagnation. Its Keynote is that *the breach must be widened in proportion as the penetration is deepened.*

What are the fresh ingredients by which this aim is fulfilled? Direct leap-frogging through a unit which has reached its objective, the penetration of soft spots, and their exploitation on the orders of the superior commander, were admittedly features of existing methods. Among the new features of the Expanding Torrent method are:—

(1) That the leap-frogging *is a repeating and alternating process throughout the advance*—units in rear replacing the slower forward units, which follow on to repeat the change if required.

(2) The rear units *automatically* follow in the wake of the faster forward units, and the replacement is made by a *diagonal* move after passing through *an already opened passage*. (The *indirect* leap-frogging minimises the risks of delay and the mixing of units.)

(3) This diagonal move automatically protects the exposed flank of the leading unit.

(4) Although the pace is set by the leading platoon, for example, it is *controlled by the company commander* who is with his supports. (By halting, he automatically checks his forward platoons, whose progress is governed by the rule that they must never press on beyond reach of *their own* supporting platoons.)

The danger in soft spot tactics is also met, and the principle of security fulfilled, by the rule that no forward unit shall press on without clearing away all resistence *within its own frontage.*

These distinguishing ideas of the Expanding Torrent method have not, so far as I am able to trace, been put forward before in any manual or military work.

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7. These comments have, I hope, shown that the suggestion that my book claimed to put forward new principles was a mis-interpretation. Secondly, that its actual purpose was to build up a *flexible* framework, based on the unchanging principles of war, in order to give the student a clearer view of infantry tactics—and, according to the reviewer himself, it has succeeded in doing so. Thirdly, that while there was not the slightest pretence to pioneer new principles, there were, in fact, a number of new developments contained in it.

8. In conclusion may I express my appreciation of the kindly tone of the review, and its open minded attitude, apart from the one misconception. The conditions of warfare are so different in India to those of a European theatre, that it was no small relief and pleasure to find a general endorsement of the methods set forth. With an Army called upon to fight under such varied conditions as ours, it is a wise vigilance which leads the experienced soldier to regard with suspicion any suggestion which might savour of standardisation *á la Ford*.

There is undoubtedly such a danger in any framework of *methods*, but not in a framework of principles—because they are not concrete acts but abstract governing truths, elastic in application.

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THE CHEMISTRY OF RATIONS.

(*By Captain M. C. T. Gompertz, M.C., I.A.S.C.*)

As the Army as a whole has not the facilities for knowing the extreme solicitude with which its food supply is protected, it is the object of this article to shed a little light on one of the most fascinating of the specialist activities of the military chemist.

Army Rations in Europe have, for some years, been subject to stringent analysis: from the elementary adage that an army marches on its stomach, it follows that that stomach must be filled with the right type of food for the purpose in view, just as the fuel of an engine has to be carefully adjusted, if the best work is to be obtained. As a result, the food stuffs and ration scales of European armies have been subjected to the closest study, experiment, and research.

In India, however, the Food Laboratory was the child of the Great War, a veritable war baby. Its parentage may be summed up as "by free Indian rations out of War purchases." The extention of peace rationing to Indian troops, and the maintenance of large garrisons Overseas created a very heavy demand on suppliers in India. With the very best of intentions, the purchasing officers in India were completely in the dark as to the quality of the articles submitted, being guided by outward appearances and taste, now, in matters financial and in dealings with Contractors, it is a case of All Hope Abandon if one is in the dark, for the darkness is apt to be very black indeed. And the result, at first, was not only the creation of profiteers of the bannia class, but also that the rations were below the high standard, which Government had intended.

Into this darkness came the Food Laboratory, and to it was presented an enormous field for activity. I need only mention that in the short 5 years of its life, this lusty bantling has

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analysed over 150,000 samples, reporting on each and every one of these numerous and varied food stuffs. I will deal with figures later, but at the very outset it must be made clear that the Food Laboratory has cleared up the mystery of the ACTUAL COMPOSITION and FOOD VALUE of the article submitted.

In India, this chemical knowledge is of vital importance for the following reasons:—

(1) The Caste Prejudices of Indians.

By providing free rations, the Government conferred a very great boon on the Indian Army, but it was necessary to ensure that the rôle of fairy god-mother was not thereby unwittingly abused.

Apart from genuine caste prejudices, there are always liable to be agitators, who without the slightest grounds for their fabrications, would be ready to assert all sorts of infringements of caste in Government rations.

Unless, therefore, the authorities had some reliable means of knowing what the ration actually did contain, it would not be easy to refute these charges convincingly.

Now, however, the Food Laboratory tests every big contract before acceptance, and states categorically what the food offered really does contain. And it goes further than that, for the rejection of all fakes and mixtures means that the Indian soldier gets the genuine article. The result is that the army ration for Indian troops is not only as caste-pure as any that might be obtained from a Brahmin, but is as a rule far less open to religious scruples than the bazaar or village article.

(2) The Detection of Fraud.

Adulteration of food is a far easier matter in India than in England. This is due to the peculiar facility with which many staple Indian foods, such as ghi, lend themselves to adulteration; it is also due to less stringent commercial laws.

The Supply Officer, though a good judge of exterior quality, is not a chemist, and has only rough and ready means of testing such as past experience, taste, smell, etc. Therefore the Food

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Laboratory comes to his rescue, and by laying bare the truth, prevents the foisting of inferior articles or cheap substitutes on the Army, thereby also preventing heavy waste of Government money.

(3) *The Preservation of Food.*

The preceding two reasons deal mainly with the first purchase of food. We now come to the storage problem. India is climatically a very difficult country in which to keep either tinned or fresh articles. It is, nevertheless, necessary to keep reserevs as well as a working stock of food, and therefore it is of primary importance that the condition of doubtful articles in store should be investigated before issue. As a result, the Half Yearly Submission of Samples is made from the stocks of the Indian Army Service Corps, and also of samples at any time of any stocks the condition of which is uncertain or suspected. To quote one example, some beans were found to have secreted that very violent poison, prussic acid, which showed that their analysis before issue was eminently desirable!

(4) *Research.*

India is a country with its own peculiarities and its own problems as regards food. It is not sufficient to rely on the research work of the British chemist, who is dealing with a different problem with different requirements and different means. For example, caste prejudices do not concern him, nor does he have to consider rapid deterioration. Yet food values in India had scarcely been studied at all, and so no reliable data existed, prior to the birth of the Food Laboratory.

Even in the problem of rations for British, as opposed to Indian troops, there is much that prevents the application of the home ration in toto to the Indian establishment. Firstly, the quality of the same article is not the same in the East, as for instance, the well known fact that Indian meat is not nearly up to the high standard that prevails in Western Europe. Secondly, the climate makes its composition unsuitable. Thirdly, heavy transportation charges have to be considered, whereas in England the suppliers are comparatively close at hand.

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By research work in India, the ration has been re-arranged, paring here and adding there, so that a more suitable diet is obtained, which compensates for the geographical change.

These four main reasons amply justify the chemical work now being done at Kasauli. It is not work of a spasmodic nature, which once done is finished with for ever, for, though rations have been improved out of all knowledge, yet the standard has to be maintained, by a vigilant watch over all food tendered to the Army. The following figures give some idea of the amount of work handled, the drop in 1922 being due to a revision of the system, during which the submission of routine samples was temporarily restricted: the daily average counts Sundays as working days.

	Year.	Total.	Daily Average.
Six months in	1918	3,832	21
	1919	20,823	54
	1920	42,187	119
	1921	38,798	106
	1922	30,245	81
Seven months in	1923	20,133	96

I will now introduce the reader to the Laboratory, and perhaps the best way to illustrate its methods is to follow the actual tests of some of the more important articles.

The Laboratory is situated in a converted barrack-room in Kasauli. Kasauli reminds one of a pretty English village, and is a hill-station of various levels: at the top is the Club: half way up are most of the bungalows: and at the bottom are the shops, the British barracks, and the Food Laboratory.

Colonel Davys, O.B.E., I.M.S., is assisted by Mrs. Davys who is not only a highly qualified specialist, but has for years devoted herself to this very valuable branch of chemistry. To prevent continual repetition of their names, I will refer to him as the O. C. and to Mrs. Davys as the Assistant. It will not always be possible to avoid an occasional technical term, but the aim is to explain the work as simply as possible.

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Training of Personnel.

A staff of eight B. O. R.'s carry out the duties of the Laboratory, but the actual collection and interpretation of the results is solely in the hands of the O. C. and his Assistant. As a rule, candidates are expected to have had some previous apprenticeship to chemistry. They commence with 6 months simple training, and all recruits are put through the following course:—

Weighing..	8 months.
Simple measuring	1 month.
Routine work, *e.g.*, Opening tins	1 month.
Washing of flours and glutens	4 months.

As a consequence, no man can start on analysis in under 12 months, and it usually takes 18 months of careful training before a recruit is fully qualified to pull his weight in the Laboratory.

I should like to stress the importance of the "Berlin Method," by which the actual subordinate, who carries out the less vital experiments expresses no opinion, but merely obtains a result. In many cases, he only produces some of the results and the more vital processes are left to the O. C. or his Assistant. But, whether he carries out part or whole of the analysis, his work is purely mechanical, following clear and carefully laid out and stereotyped processes. To make deviation from rule impossible, the Assistant has prepared a book of processes for each man, in which are detailed the exact series of experiments for each substance under analysis. It must not be forgotten that every foodstuff has its own particular composition, it has, therefore, been necessary to write out separate instructions for each of the 300 odd articles of I. A. S. C. supply, so that each man has a rule of thumb, and also to enable the O. C. to see at a glance at what stage each analysis has arrived. The personnel are only responsible for writing down the result obtained, and, by a stringent method of labelling, they are denied all clues as to where the sample has come from. Their figures, with the sample number, pass on to the O. C. or his Assistant for elucidation.

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To illustrate the complexity of the various substance dealt with, I need only instance one, *e.g.*, Oil Cake. Now the chemist, in arriving at a food value, has continually to bear in mind the particular function that particular substance is to fulfil. None of us would expect the same result from cocoa as from preserved meat, and the ultimate object must therefore never be lost sight of.

To return to our example—Oil Cake. A thoroughly balanced article for ruminants is required. The main desiderata would then be: Nitrogen, to build up the muscles, Fat to strengthen the animal, Ash to give the necessary salts, Cellulose to add the essential bulk (ruminants need quantity as well as quality) and as little of the useless Hydrocyanic Acid as possible. Therefore, in arriving at the food value of a sample of Oil Cake, all these factors must be examined as a whole before any decision can be given

The actual analysis of articles varies in almost every case, not only owing to the different components, but because different results are required. One factor, which is invariably tested for, may be mentioned—moisture. Moisture is of supreme importance because in India the preservation of every food stuff depends on the quantity of moisture contained. There is no general rule about moisture, as it varies in different substances. An officer who shall be nameless, once complained of some garlic, which he had heard contained 52% of moisture, and added that what he wanted was dry not wet garlic. He was then told that wet garlic ordinarily contained 86% of moisture, and thereafter he refrained from any incursions into the field of chemistry.

The actual analysis varies in difficulty according to the complexity of the substance itself or the tests in its analysis. To give examples:—

Simple analysis	...	Tinned meat, flour, atta, bran.
Difficult analysis	...	Oil Cakes, Tea.
Highly Technical analysis		Ghi, Patent Foods

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The Arrival of the Sample.

Arrivals are entered in a day book, with source of receipt and other particulars, whilst each sample is given a card number. Arrivals are grouped into—

(1) Contracts, Complaints, Special Samples.
(2) Wheat Products from Controlled Mills.
(3) Ghi.
(4) Grain.
(5) I. A. S. C. Half Yearly Stocks analysis.
(6) Canteens.

The particular sample, with only its card number on it, is then placed in a cage, from which it can only be removed at with the express concurrence of the O. C. or his Assistant.

Once it is passed out of the cage, the tin is opened. A drop of water is placed on the unopened tin, and, if, as soon as the tin is pierced, the water drops in, a note is made that the pressure is negative and the sample has passed its first test satisfactorily.

The substance in the tin is then thrown out, cut in two, and examined. It is broken up and a search is made for hard tissue, foreign matter, bits of glass, etc., and, in the case of meats, for excess of fat, over and above the percentage permitted. If it is a new contract or of old stock, there is a careful examination for poisons. Thus any substance that contains any solvent of tin must invariably undergo a rigorous test, as for example Tomatoes, which contain a solvent of tin within themselves.

The actual weighment of the amount of the sample used for analysis is a matter of skill and often of great delicacy. Earlier in this article, the reader may have been appalled at the length of time spent in weighing in the novitiate of the recruit. But it is not a matter of mere weighing when the balance has come to rest, for the men are taught to weigh on the swing, as well as to a high degree of accuracy. Thus the O.C.'s balance shows differences of weight up to one ten-thousandth of a gram. A point of interest is that all the balances are set in foundations 16 feet deep, so that movements about the Laboratory have no effect on the scales, whose foundations, besides going deep, are separate from the ordinary flooring of the room.

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Ghi.

I will now outline the analysis of the most important of the foods of the I.A. from a chemical point of view—ghi. It is a most interesting practical experiment to watch, and gives some idea of the care and skill taken at Kasauli.

First, a measured quantity of ghi is put into a flask and saponified by heating with an alkali.

The resulting soap is then broken down by a strong acid, and the brown ghi colour is changed to a beautiful fresh red, by the addition of a dye. This dye has the property of changing to red, when there is sufficient acid, and so it serves as a proof that enough acid has been put in. The red fluid is then boiled in a flask with a bent tube, and the distillate goes down the tube and is collected.

The distillate is first cooled and then analysed, by passing an alkali into it, through a long tube, with a scale marked on it. Primarily the distillate, which is in a dish below the tube, is colourless, but gradually it changes slowly to pink and then to red. As soon as it is uniformly red, the supply tap of the alkali is closed and the level, at which the remaining alkali in the tube stands, is read off. The result is put on the card.

The second process, the refraction of ghi, is solely in the hands of the O. C. or his Assistant. The reader must forgive a technical definition "When a ray of polarised light is passed through a prism, immersed in water, the light is swung either to right or left, if it passes *en route* through a layer of fat."

The refractometer has an eye-piece like a microscope, and on a little platfrom are two small lenses on which a little of the ghi sample is smeared. Then, when you look down the eye-piece, you will see the ray of light, but with it a shadow. Both the light and the shadow play on a scale, and the scale is read, where light meets shadow E. G. 58.

If the reading on the scale is high, *e.g.*, 72 it means a high ratio of vegetable oils, and if low, *e.g.*, 38 it indicates a high ratio of animal oils. A good sample would contain an even balance between the two.

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The third process is by taking a measured amount of ghi, adding a dye, and placing the two in a bottle, with a solvent, which is added till once again the pink colour is obtained. This enables the gross acidity to be calculated, and the figures are added to the card.

The next two processes are too long and technical for description, *viz.*, to find the soap value of the ghi, and to test for actual adulterants—the latter by a whole series of separate tests for each adulterant. Lastly, the ghi is tasted, by smearing the ghi on the tongue with a glass rod, so that the full flavour may be appreciated—I may add, the least pleasant of tests.

To summarise these processes :—

(*a*) Analysis of distillate.
(*b*) Refraction.
(*c*) Acidity.
(*d*) Saponification value.
(*e*) Adulterants in detail.
(*f*) Taste.

These six results are compared before any final decision can be reached. All six must be present in a satisfactory proportion for acceptance, though, in the case of rejection, a bad refraction value may be sufficient evidence of unsuitability.

This brief example has been given to show the immense care with which the food of the Indian Army is safeguarded. It will be seen that, when an article is so thoroughly "pulled to bits," no loophole remains for fraud or cheap substitution as one or other of the tests will infallibly expose the particular deceit employed.

Beer, Jam and Rice.

The variety of the work done is best seen by comparing the test of a solid with that of a liquid. In the case of Beer, the tests were :—

(*a*) Retention of head.
(*b*) Colour.
(*c*) Acidity.
(*d*) Alcohol value.
(*e*) Taste

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Every article that comes into the Laboratory, however nauseating, has to be tasted, as it is obviously useless to pass a food as chemically pure, if it is revolting to the palate. Accordingly taste is usually the first test applied.

In every case of tinned goods, the pressure, as mentioned before, is tested with water. One dreadful tin of jam that had just come in by the day's post gave a display like a baby fountain, when the tin was pierced. This particular sample was an interesting example of faked foodstuffs. The tin bore, in letters as large as life, the name of the firm and the legend—for legend it was—STRAWBERRY JAM. The actual contents were found to be Tomato Pulp.

Some practical advice about Rice was interesting to the ordinary soldier. The highly polished variety seen in many shops is practically valueless as most of the phosphates have been polished away, whilst thin brown streaks on the rice are not a sign of deterioration but of value, for they show that the layer below the husk has not been polished away.

Grains.

No survey of the work of the Laboratory would be complete without considering the analysis of grain. The Indian Army depends so much on Animal Power that the stocks of grain are amongst the largest in the world.

A 5 pound sample, from the Government Agents, is put on a table of fixed dimensions and with a zinc surface. This uniformity of size brings all the chemists in the world into line, as otherwise the sifting is done on either too wide or too close a field. First the whole sample is looked through for poisonous seeds. In one sample I saw, a big castor oil seed, glossy black with oval markings, was found and a wire was sent at once to the submitters of the sample. The whole stock would then have to be sifted, whilst, had it been one of the smaller seeds less simple to remove, rejection might be the only course.

500 grams (about 1 lb.) were then weighed and sieved, and the dirt obtained is weighed and the proportion calculated. Then 50 grams were placed on a tray for a minute examination, grain by

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grain, for foreign matter, poisonous seeds, minute insects, and red grain. The red wheat needs an expert's eye for detection, as it is only noticed by a faint salmon flush. In excess, it lowers the quality of the flour.

With all forms of grain, this sieving is the main process, as no agent will guarantee food value but merely that the article is up to the standard of the open market. In the case of Dhalls a seven partition sieve is used, each partition containing a smaller mesh of netting. After sieving, each partition contains a different sized quality, the first four holding the really good dhall, and the last three have the less valuable admixtures of broken dhall, dust and dirt. The weights in each partition are entered on a form, which goes to the O. C. for interpretation.

As in all other cases, moisture is calculated. 10 grams are put in an oven, and the moisture worked out after cooking, *i.e.*, the moisture has been evaporated away with a corresponding loss of weight.

In the case of wheat, the grain then goes to a Controlled Mill for milling, and 5 samples are sent in after milling, *viz* :—

(*a*) Wheat as originally delivered, before milling, to see that it is identical with the original sample.

(*b*) Clean Wheat, after leaving the washers but before being ground in the Mill.

(*c*) Bran.

(*d*) Atta.

(*e*) Flour.

The last three must balance the first in food value to prove that there has been no unnecessary waste, in milling.

Research and Health.

The three main objects of Rations are to support the normal functions of the body, to produce the extra energy for a special effort, and to keep the body healthy. The chemist begins by calculating the relative values of various foods, and expresses these values in calories, the technical definition of which is The amount of heat required to raise the temperature of a kilogram

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of water through 1 degree Centigrade. Roughly this mean that 1,000 calories supply the extra energy for a man to march 12 miles.

Having obtained a basis of comparison, the chemist has to re-arrange the components of a ration, so as to get a thoroughly balanced diet, as well as mere energy producers. It is not enough to know that 3,500 calories are sufficient for an ordinary day's work, or that 1,000 extra calories would add the energy to withstand severe physical strain. It is necessary, above all, to preserve health, and here the Food Laboratory was faced with a very ancient problem. That problem is scurvy.

Scurvy has attacked all the great armies in history. It consists of swelling in the legs, general weakness, inability to march or to carry equipment, and it is due to a lack of fresh meat and vegetables.

Now, of two Polar expeditions, one used lime juice as an anti-scorbutic, and suffered severely from scurvy, whilst the other was almost immune on a diet that included lemon juice from Messina. This established a strong *primâ facie* case for lemon juice, but it was only after a great deal of research that it could be scientifically confirmed.

But lemon juice, although it is now a ration in areas where fresh vegetables cannot be obtained, has serious shortcomings from a military point of view, for

(*a*) it does not keep very well.

(*b*) it loses its value at a comparatively early date, in about 3 months.

(*c*) it is very difficult to carry.

(*d*) it is easily spilled or wasted, and therefore is not a good Field Service article.

The General Staff, therefore, set the Kasauli Laboratory a stiff problem, for they desired an anti-scorbutic, which would (*a*) keep well, (*b*) be portable and of small bulk, (*c*) be solid, (*d*) not be a hard solid, (*e*) be pleasant to taste, (*f*) be acceptable to British and Indian troops, Hindus, and Musalmans alike, (*g*) dissolve in water, (*h*) not

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take up water from the air, (*i*) pack into a tin or glass, (*j*) not be damaged by exposure to heat.

The principle on which the O. C. and his Assistant work in Research is expressed in the words "Divide et impera," for each works independently of the other and when any result has been obtained it is submitted to the other for independent test. Mrs. Davys has been engaged for some years on this researeh, and has produced a substance, which the O. C., in the rôle of Devil's Advocate, is trying to disprove by a series of tests: if he fails, a most valuable discovery will have been made on behalf of the Indian Army. I was privileged to taste this substance, and one cannot but agree with the C. G. S. who said that a sentry would have to guard it, to prevent its being stolen.

The methods of research are most interesting. A mixture, known as American ration, is made of oats, butter and milk powder, heated very highly, and salts added. It contains all an animal wants except anti-scorbutic vitamines. Any animal, fed exclusively on this diet, dies between the 15th and the 26th day of the diet. To this basis, can be added anything containing vitamine, and its effect noted, and so animals are fed on the American ration, to which varying quantities on anti-scorbutic are added. The animals are kept in separate hutches and the results are carefully entered up. In some cases, the animals are given the equivalent of British and Indian rations, and they are then labelled as British Troops or Indian Troops, as the case may be.

Lastly the Food Laboratory has a little squad of ducks. Their purpose in life is sinister, and furnishes a fable with a moral, worthy of Aesop himself. Ducks, alone of all animals, will eat anything they can lay their beaks on. So, for the good of humanity, they are sometimes given samples, in which poisons are suspected, and post mortems are held afterwards. It is, surely, the most condign punishment for gluttony in the World!

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GET-RICH-QUICK IN TRAINING BATTALIONS.

(By Lieut.-Col. N. C. Bannatyne, 10/10th Baluch Regiment.)

THE COFFEE SHOP AS A MONEY MAKING CONCERN.

1. The opportunities open to an Indian Army officer of making money easily and rapidly, without running counter to the regulations *bien entendu*, are distressingly infrequent. The fact of being able to do so as the commanding officer of a Training Battalion is to me, a thorough paced Scotchman, a pleasing novelty in the monotonous life of an Indian garrison town. Several friends have asked me to give them details and this note may interest other officers who may have encountered difficulties in the initial stages of organising a Training Battalion, for it suggests a means of increasing the unit income and, with luck, of supplementing the allowances authorised by our benign government.

In more spacious days when a commanding officer was a small tin god, a fellow anxious to increase his funds simply squeezed the regimental bania till the requisite amount was forthcoming. A simple system ; but things are not what they were, and the bania is no longer a recognised institution. Consequently other sources must be tapped. One's thoughts instinctively turn to the British Service canteen, wet for choice. In the Indian Army, however, it is only in certain all Hindu or Gurkha units that a wet canteen could repay outlay ; in mixed or in all-Mussalman units it would not succeed. Besides, the wet canteen may become the sport of Indian politicians egged on by " Pussyfoot."

There remains the dry canteen or Coffee Shop and this offers possibilities, hitherto unsuspected by me, of coining money in Indian units, no matter what their composition may be, especially in Training Battalions.

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NECESSITY FOR RAISING MONEY AND FOR PROTECTING THE MEN AGAINST PROFITEERS.

2. On taking over the Training Battalion which I have the honour to command—a war raised battalion composed wholly of Mahomedans from the Northern Punjab and Frontier Provinces—I found myself in a situation approximating insolvency. Most of the assets had been tied up in bonds whilst the cash available was insufficient to meet routine requirements. Thanks to war legacies in the form of unrecoverable debts, untraceable clerks, etc., some of the funds required careful treatment and the office fund was of course in the usual parlous condition. My applications to the C. M. A. for an advance to tide me over my difficulties apparently put him on the sick list and eventually I had to sell out half my cherished bonds. At the same time I approached the C. O.s of of the Active Battalions of the regiment for a temporary loan, in my most tactful manner, hat in hand. So piteous was my tale that the noble sum of Rs. 7,000 was generously placed at my disposal for twelve months, though it must be admitted that certain of the C. O.s showed a hearty reluctance to part with their surplus cash.

With this Rs. 7,000, plus the amount realised by the sale of bonds, I was able to meet the more pressing demands, but I was still faced by difficulties in maintaining Sports Funds, Loan Funds and in furnishing the mess, etc. It was obvious that I must tap some new source of income. It was in pondering over this difficulty that I was encouraged shortly afterwards to attempt to 'down' the profiteering industry in so far as it affected the battalion. The men, mainly recruits from regions where shops are practically unknown, were particularly ignorant of down country prices and were being fleeced right and left both in the local Station bazaars and in the regimental bazaar, though in the latter stringent supervision and occasional disciplinary action enforced some measure of decency.

My objects then were:—

(*a*) To raise money with which to increase the efficiency of, and ameliorate conditions of service in, the battalion.

(*b*) To reduce the prices of goods sold to the men.

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(*c*) To do away with a large proportion of the shopkeepers in the regimental bazaar and divert money from their pockets to the battalion coffers.

A short article appearing at that juncture (*Fauji Akhbar*, May 1923), indicated the Coffee Shop as the very thing I was looking for and I determined to start one forthwith.

MINERAL WATER FACTORY AND CLOTH DEPARTMENT.

3. It being then the hot weather the installation of a mineral water machine and the sale of cool clothes appeared to be suitable initial ventures. A British and an Indian officer were sent to Bombay to interview wholesale firms, obtain quotations and samples, and inspect various types of mineral water machines. On the way down at Baroda, by the kind permission of Lieut.-Colonel C. H. Jardine, Commanding 2/19th Hyderabad Regiment, they learnt a great deal about book-keeping and the general management of a Coffee Shop.

It was decided to buy a mineral water machine capable of turning out 60—80 dozen bottles a day, price including essentials Rs. 1,285—further small amounts had to be paid for altering the building, laying down a water pipe, tank, etc. To start with 100 dozen second-hand bottles were considered sufficient.

En passant it may be observed that second-hand bottles are better value than new ones, many of which break when first tested with gas pressure.

I give in Appendix A a detail of equipment for the mineral water factory, the essences which have been found popular and the average monthly cost of running the factory.

Early in June last two sepoys whom I had sent to Bombay for training in the manufacture of mineral waters returned and the machine was erected and ready for work on 7th June. As a tentative measure the following prices were fixed; Sodas, nine annas per dozen; Sweet minerals ten annas per dozen. Experience has proved that these prices result in a very fair profit (*vide* para. 4) and will admit of subsequent reduction.

The sale of cloth in a small way was also ecommenced on the 7th June at prices varying from 10 to 50 per cent below bazaar

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prices. Within a week the idea had caught on and further orders had to be placed with wholesale dealers; these orders covered a variety of articles of a miscellaneous haberdashery type as well as cloth. The following list gives an idea of what was being freely sold in the Coffee shop in August:—fancy kullahs, puggris, shirtings, tussore silks, waistcoats, long cloth for suitings, socks, hosetops, shoes, chaplis, swagger sticks, handkerchiefs, towels, soap, razors, belts, bedspreads, writing materials, matches, cigarettes, tobacco, kit boxes, charpoys, mosquito net poles, water-jars, brass and boot polish, blanco, purses, boot laces, pyjama strings, etc., etc.

Already three shopkeepers have been turned out of the regimental bazaar and as the coffee shop expands the rest will follow, but one will be retained for the sale of vegetables, sweets and milk, perishable articles which it is not intended to sell in the coffee shop.

Profits.

Although the prices fixed in the Coffee Shop are "cut throat" compared to the local prices yet the profits made are quite astonishing, and give one new ideas as to the rapacity of the self-respecting bania. In the following table I show the total amount of goods sold and profits realised in the four months the Coffee Shop has been working:—

Month. 1923.	Mineral Factory.		Coffee Shop.		Total.	
	Sold.	Profits.	Sold.	Profits.	Sold.	Profits.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
June ...	113	72	2,476	277	2,589	349
July ...	265	146	3,586	254	3,851	400
August ...	246	142	8,124	470	8,370	612
September ...	281	177	7,437	442	7,718	619
Totals ...	905	537	21,623	1,443	22,528	1,980

From this it will be seen that the amount of business done is considerable; the profits realised are larger than appears at first sight for by the courtesy of certain well established firms, who have given me generous long credit terms, I have been able by a quick turnover to keep the amount of capital within

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reasonable limits, *i.e.*, under Rs. 10,000 which I have been able to produce within the battalion. All profits hitherto earned have been devoted to paying for dead stock, shelves, accessories, etc., but from 1st October the repayment of capital will commence. Once this is completed it will be possible further to reduce prices or to give grants to various funds. There seems no reason why the business done should ever suffer any marked diminution for the inflow of recruits and outflow of trained men are practically constant in a Training Battalion. Recruits are allowed to purchase goods to the value of Rs. 7 in the month. Trained soldiers Rs. 10. N.-C. O.s and I. O.s are allowed facililities in proportion to their pay. Special facilities are also given to married men, men going on leave, furlough or pension.

Recreation Room.

5. Early in August a recreation room adjoining the Coffee Shop was fitted up with a few pictures, tables, benches; certain games were purchased, such as chess, draughts, halma, wall ring, etc., also a gramophone, at a total cost of Rs. 700. I was doubtful of the value of such a room, but I was quite wrong—the place is often crowded in the evening, the most attractive items being the vernacular gramophone records and the pupil teachers who attend for two hours daily to write home letters for illiterate recruits and to translate the Indian papers, of which a dozen or so are always available. As soon as funds become available it is intended to obtain a magic lantern slide and eventually, if possible, a portable cinematograph apparatus. A tea room will also be added when the cold weather comes in.

Supervision and book keeping.

6. The Coffee Shop, under the supervision of the quartermaster and medical officer, is run by a committee of Indian officers who inspect all stores received, advise as to articles to be stocked and prices to be charged. The committee also checks the balances of stores on the 26th of each month and scrutinises all receipts.

The executive staff consists of 1 havildar, 2 lance-naiks, 2 pupil teachers, 2 sepoys and 2 bhistis mainly found from convalescents

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and light duty men. The monthly allowances are fixed by the committee from time to time and in September totalled Rs. 38.

No cash payments are permitted. Each man must sign for articles purchased. On the 27th of each month all receipts are forwarded to the Company Commander concerned and the amounts are debited against the individual's pay.

The Cash Account and Balance Sheet are kept up in the quartermaster's office also the Dead Stock Ledger and Register of Prices. The remaining books are kept up by the N.-C. O. in Charge of the Coffee Shop.

Coffee Shops for Active Battalions.

7. This note refers solely to the case of a Training Battalion with its steady inflow and outflow of recruits and trained soldiers. It is possible, however, that Active Battalions serving in India (exclusive of Wazir Force) might also find profit in a Coffee Shop. Anyhow it appears worth trying for even an old established battalion can do with more money, and there is no doubt whatever that the sepoy throughout India has been, is being, always will be, fleeced by the Indian shopkeeper to the tune of anything between 50 and 200 per cent over cost value unless prevented from doing so by competition. The more isolated the station the more plausible are the lies told about extra freight charges, loss by theft, etc., etc. It is true that Active Battalions are liable to move; normally notice of the move is given in ample time, however, and stocks can be disposed of—in any case portable mineral machines can be purchased, while the weight of the stocks in a Coffee Shop, excluding furniture which can be kept at a small figure, need not at any time exceed 10 or 15 maunds, for which transport could usually be arranged even in these days of *ultra penuriousness.*

Conclusion.

8. The difficulty experienced by me has been not so much to sell stuff as to prevent men from spending too much money. They one and all want to take or send cheaper and better goods to their families in their villages. In my opinion, which I give for what it may be worth, it is distinctly up to every commanding

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officer who has not already tried a Coffee Shop to recollect that hoary old *non possumus* attitude we have all suffered from in our younger days, to determine he can do better than his predecessors, and to experiment. That at least can do no harm, and he may make the conditions of life in an Indian station, or frontier outpost, slightly less poisonous for his British and Indian ranks than might otherwise be the case. Putting the matter on another basis, he might usefully remember that "Money is Power," it furnishes not only the sinews of war but the sinews of peace.

"APPENDIX A."

(1) Detail of equipment for mineral water factory :—

		Rs.
1	Club machine complete	265
1	Three candle filter	180
3	Tanks	150
1	Teakwood stand complete with table, cupboard and bottle rack	300
1	Bottle washing machine	24
2	Dozen brushes	8
1	Filtering stand	6
2	Filter bags	9
2	Syrup buckets	16
1	Facemask	4
1	Set of 1 oz., 4 oz. and 10 oz. glass measures..	5
1	Set of 1, 1½ and 2 oz. zinc measures ..	2
3	Measures ; 1 pt., 1 gall. ; and 1½ gall. ..	12
2	Enamel funnels	2
1	Pestle and mortar	8
1	Syrup boiler and ladle	50
3	Gross rubber rings	3
3	F. A. cylinders for gas	240
1	300 gall. galvanised iron chlorination tank ..	75
3	Aluminium degchies..	27
4	Galvanised iron buckets	4
1	Table with drawers	32
2	Galvanised iron bath tubs	25
1	Handcart for delivery of minerals ..	50
100	Dozen bottles at Rs. 7-8 per doz... ..	750
	Total ..	2,248

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(2) The following essences are suggested to commence with. (1 lb. of of each except citric acid, 7 lbs.) :—

	Rs.
Stone ginger beer	10
Lemon	8
Raspberry	8
Lime juice and soda	8
Pineapple	8
Heading	2
Lime jiuce and soda colouring	2
Raspberry colouring	2
Caramel	2
Citric acid	16
Total ..	66

(3) Monthly average cost of upkeep of mineral water factory :—

	Rs.
Freightage on cylinders	8
Cost of bottle boxes, rubber rings and upkeep of machine	5
Value of broken bottles written off	14
Essences expended	13
Sugar expended	27
Allowance of staff	10
Do. Bhishti	6
Cost of gas	30
Total ..	113

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THE MYSTERY OF MAPS.

By Captain R. J. Wilkinson, O.B.E., 2nd Bombay Pioneers.

1. With the exception of certain supermen, it is probably safe to say that before the war the average regimental officer had neither heard of, nor thought about, such a thing as a map projection. A map was a map, and so long as it represented the position of any given point on the earth's surface with tolerable accuracy, this was all that was required.

2. The late war, however, has changed all this and the officer is now expected to have at least an elementary knowledge of Mathematical Geography. Artillery shooting by map and by aircraft co-operation, aeronautics, sound-ranging, flash spotting, and wireless interception are a few only of the many branches of military activity which demand an accurate representation of the earth's surface.

3. If the earth were flat, as our forefathers thought, it would be a comparatively simple matter to represent its surface features on a map, essentially if one were allowed the same licence as the ancient cartographers, who supplied from their imaginations, what they lacked in knowledge. As, however, the form of the earth approximates to a spheroid it is difficult, to say the least, to represent its land forms accurately on a flat sheet of paper. There is actually in existence a set of maps made on *papier mache*, each sheet being a segment of the surface of a spheroid. Such maps, however, are expensive, clumsy and impracticable.

4. The science of Mathematical Geography is concerned with the computation of points on the earth's surface and their correct representation on a plane sheet. If the area to be represented is small in comparison with the whole of the earth's surface, no difficulty need be experienced, as for instance a Town Guide map, where the curvature of the earth does not become apparent. In larger areas, however, this curvature begins to complicate the

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problem, and it becomes necessary to consider how it can be dealt with. A sphere cannot be opened out into a plane like a cone or a cylinder, consequently it is impossible to show on a plane the configurations of a sphere, while retaining the correct proportions of areas or equality of angles. It is obvious therefore that something must be distorted. In other words we cannot have both correct bearings and correct areas. The object then of a good map projection is to find such a compromise that the errors are equally distributed and reduced to a minimum, always having regard to the special purpose for which the map is required.

5. The first step may be explained as follows:—(See fig. 1 let *a b c d e* represent a section of the earth's surface and let *ae*, the chord of the arc, correspond to the map sheet. Suppose all objects on the curve to be projected down on to the plane, such as the church, the house and the tree shown in the drawing. It will immediately become obvious that the distance from *a* to *f*, or *f* to *g*, will be less than from *a* to *b* or *b* to *c* and distortion will be the result. Conversely, if we attempt to keep the distances and bearings between the points, *a b c d* and *e* correct we shall have to distort the area between *a* and *e*. It will also be seen that the smaller the area to be represented the less the distortion.

6. A globe, of course, gives a more or less perfect representation of the earth's surface but limitations as to size make it impracticable for a globe to be produced except on a very small scale. A globe to show the earth on a scale of 11,000,000 would be about 135 feet in diameter.

7. There are about 27 different systems of map projection, all good for their special purpose but none suitable for all purposes. In this article an attempt will be made to give a simple explanation of a few of those in common use, particularly for topographical maps in England and India.

8. The construction of a map resolves itself into the drawing of two sets of lines on a sheet of paper, to represent meridians and parallels respectively, which being done, the filling in of the geographical or topographical detail requires nothing more than accurate computation are careful drawing.

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9. The Cylindrical Equal area projection may be explained as follows: Supposing a model of the earth to be enveloped in a cylinder and that the plane of each parallel marked on the sphere were projected on to the cylinder. (Fig. 2.) In the model the parallels are equidistant round the circumference. If now we unroll the cylinder we get a projection as shown in figure 3. The parallels get closer together as they approach the poles, while the meridians, instead of converging to the pole are opened out and represented by parallel straight lines at right angles to the parallels of latitude. The result of this is obviously distortion of land forms which increases with the distance from the equator.

10. Mercators projection is similar to the simple cylindrical with the exception that as the parallels leave the equator they are opened out to correspond with the opening out of the meridians. The result is considerable exaggeration of areas towards the poles.

11. If instead of enveloping the whole earth on this imaginary cylinder we take a strip between any two parallels, it will be seen that the distortion will be proportionately less and we get the cylindrical projection known as the "French" or "Lambert" grid system, which was used by the Allies on the Western Front during the war, and issued in modern English maps, such as are supplied for examinations, a specimen of which may be found in the Manual of Map Reading and Field Sketching, Plate VII. (At the end of book.) In this system all points on the map are computed with reference to an arbitrary origin in the South-West corner, consequently such references are independent of the map scale. Unfortunately, the rectangular projection in only suitable for comparatively small areas, owing to the inevitable distortion towards the edges of the map. This distortion is calculated to be 1 in 800 at a distance of 3 equatorial degrees from the origin.* Consequently the ouly possible way to circumvent this undue accumulation of error is to have a number of systems each with its separate origin, each system overlapping about two degrees This overlap is apt to be confusing and inconvenient. By mapping all round the origin, and then adding a round number to all positions

* The permissible error in Artillery shooting is 1 in 1,000.

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south and west of it, we get an artificial origin with regard to which all points in the area are east and north, thus increasing the apparent area whilst still keeping distortion within reasonable limits.

12. Suppose now, instead of developing our strip into a cylinder we regard it as a section of a cone and develop this into a plane surface, we shall get a strip as shown in figure 4. The parallels equally spaced are the meridians converging to the apex of the cone. This is a simple conical projection.

13. If, however, instead of developing our strip of territory into one cone, we divide it into a series of narrow strips, each say 15 minutes of latitude, and develop each strip as a separate cone with the apex of each resting on a prolongation of the earth's axis, we shall then get what is known as a Polyconic projection. (Fig. 5.) It is a modified form of this projection which is used by the survey of India. The Modified Polyconic projection is very suitable for topographical maps as each sheet is, within the limits of accuracy of surveying, correct as to form, bearing and area.

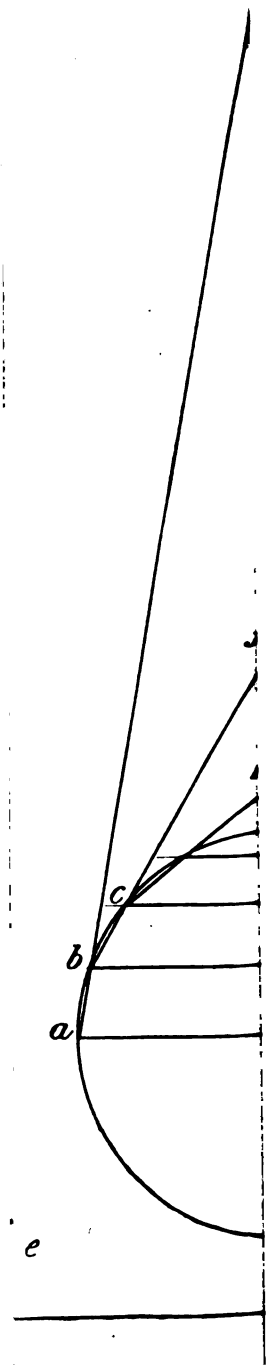
14. It is hoped that the above explanation has made it clear that a continuous grid, as was used in France during the war is impossible:—

(*a*) on a polyconic projection;

(*b*) in a country covering more than six degrees of longitude.

15. Mr. E. A. Reeves F.R.G.S., in his book entitled "Maps and Map Making" gives an interesting and amusing series of diagrams (figs. 6—9) illustrating the difference between various projections of hemispheres. The latitudes and longitudes of all points on the head are exactly the same in each projection. See also figures 10, 11 and 12. These give a further explanation of the projection of hemispheres. Imagine a hemispherical lantern slide with points on the earth's surface appearing on it and suppose the slide to be projected on a screen. The representation of points A. B. C. and D. on the screen will vary with the position of the light. In figure 10 the light 0 is situated at a distance from the centre of the globe equal to the radious thereof. The resultant image on the screen shows the points A. B. C. D. so that

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Fig 10

STEREOGRAPHIC

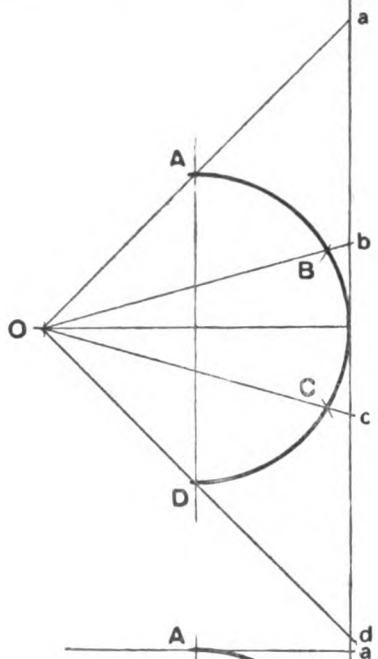


Fig. 11

ORTHOGRAPHIC

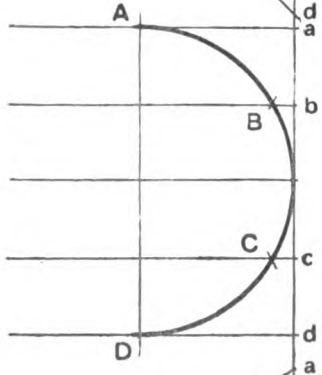
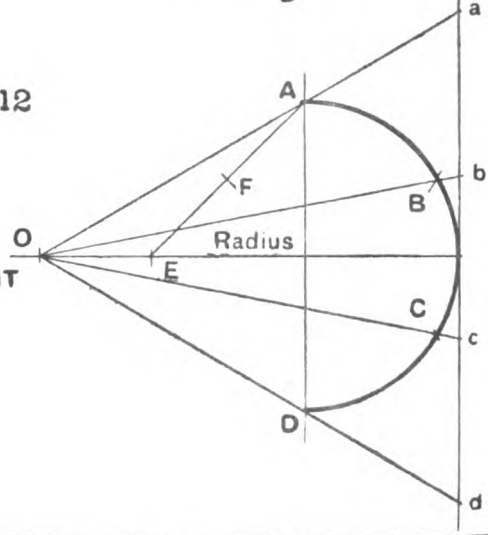


Fig 12

GLOBULAR
or EQUIDISTANT



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the distances AB and CD are greather than BC although A. B. C. D. are equidistant on the surface of the globe. This is called the Stereographic projection and is equiangular but not equidistant or of equal area. Distances get smaller towards the *centre* of the map.

16. In figure 11 the light is at an infinite distance from the hemisphere and therefore all rays fall in parallel lines on the screen in the same way that the sun's rays fall on the earth. This is known as the Orthographic projection and is equiangular but not equidistant nor of equal area. Distances get smaller towards the *edges* of the map.

17. In the globular projection this light is at 0 and OE is half the distance of OA. In this projection (fig. 12) it will be seen that both angles and distances correspond to the original on the slide. Therefore this will be an equal area projection.

18. The above is only intended, as stated in the beginning to give but a very approximate idea of the principles of map projections, with special reference to those affecting the army. To those desirous of more detailed and accurate information the following books are recommended:—

Maps and Map Making by Reeves.

Maps and Survey by Hinks.

Encyclopædia Brittanica.

Manual of Map Reading and Field Sketching, 1922.

Text Book of Topographical Surveying.

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REVIEWS.

GERMAN STRATEGY IN THE GREAT WAR

BY

LT.-COL. PHILIP NEAME, V.C., D.S.O., P.S.C., R.E.

(*London: Arnold*, 10*s.* 6*d. net.*)

Strategy is generally viewed by the junior officer with more apprehension than tactics. From his earliest days of training he has had to deal with tactics and the tactical handling of his arm. Strategy he considers a matter for more senior officers; vague impressions of the concentration of large armies, arrangements for moves of messes of personnel and material consideration of theatres of war, the necessity of forming a plan of campaign. All these matters appal him. Yet if one is responsible for the lives of men, it should be a duty to know every military subject.

Colonel Neame has given in his short book of 122 pages (exclusive of Appendices) a clear and interesting account of the German strategy in the Great War. He has had the advantage of access to all the information at present available. For four years he has lectured to critical audiences composed of nominated Staff College candidates, from whom he has received voluntary acclamation.

The material of the book is well organised, and plentifully paragraphed, thus facilitating reference. The seventeen maps are admirable and the observations of the author at the end of each Chapter are of real value. Food for thought is supplied by speculation as to the effect on subsequent operations if in certain instances other action had been taken; for example, what would have happened if Ludendorff had effected a withdrawal in 1916 from the forward positions in the Somme Valley such as he had already carried out in the autumn of 1914 in Poland?

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LIBRARY NOTICE.

The Secretary wishes to call the attention of members to the following points:—

(1) Of late books which have been borrowed from the Institution have on some occasions been returned in a damaged condition; particularly, maps have been removed and books thus rendered valueless.

Every volume is checked by the Librarian before issue and, if any defficiency exists, a note made to that effect on the Contents page. It will be necessary in future, in order to safeguard the interests of members as a whole, to hold individual members responsible for any damage done to books beyond fair wear and tear while in their possession.

(2) Particular attention is called to Library Rule No. 7. If a member wishes to retain a book beyond the authorised period, he should notify the Secretary, who will sanction retention if the book is not required elsewhere.

Books are circulated only to individual members by name. They are not loaned to Messes, etc., which subscribe to the *Journal*.

(5) The following books are missing from the Library and cannot be traced:—

(i) Sir Douglas Haig's Command and maps thereto (2 Vols.).

(ii) Philip's Systematic Atlas.

Will the borrowers of these be good enough to return them?

Secretary.

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The size of the book does not permit of a continuous narrative of all the German operations. In spite of this, the book deserves the consideration of even the most well read and experienced senior officers; for who can be absolutely certain of remembering such facts as these? the circumstances which led up to Count Von Schlieffen's decision to attack France, while holding Russia with the equivalent of 13 Divisions and 2 Cavalry Divisions; the necessity for the violation of the neutrality of Belgium; that 9 Divisions and 3 Cavalry Divisions in addition to fortress garrisons were to defend Alsace-Lorraine, while 78 Divisions and 8 Cavalry Divisions were to wheel South-West pivoting on Verdun and invest Paris; the failure of the younger Moltke, principally through the weakening of his right wing, his lack of control, his vacillation between two plans and two objectives and his weakness in permitting his Army Commanders to act as they wished; the effect of the battle of the Trouée de Charmes on Moltke's decisions; how the Great General Staff remained infallible in the eyes of the world by throwing the weight of responsibility on a junior Staff Officer, Lt.-Col. Hentsch; how Von Prittwitz's decision to withdraw the German Army west of the Vistula between Thorn and Danzig was altered on the arrival of Hindenburg and Ludendorff to one of offensive action which resulted in the victories at Tannenberg and the Masurien Lakes; the details of the enveloping movement around Lodz in 1914; the unsuccessful Russian offensive on each side of Lake Narotch in March 1916 resulting in nearly 150,000 casualties; and the causes of the success of Mackensen and Falkenhayn in Roumania.

Position warfare gives little scope for strategy, therefore the book inevitably deals with the operations on the eastern front and the western front in 1914 and 1918. Nearly every factor affecting strategy is discussed, but in so few pages, some of necessity receive little attention. The importance of transportation in all its branches is given as one of the great lessons of the war, and as a result of Moltke's and Schlieffen's teaching, it appears that this was realised by the German "High Command" to a far greater extent than by either

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the British or French. Colanel Neame clearly shows how the proper use of railways influenced the early German operations on the eastern front, how better use might have been made of this during the battle of the Marne, and how, against all difficulties, the German transportation organisation was maintained to the end.

The value of fortresses is emphasised; as illustrations of this point we read of the effect of the French eastern fortresses on operations. The retention of the Verdun salient which stretched the German armies to breaking point in 1914, and the costliness of the attacks against it from 22nd February to 11th July 1916. We are told that the Germans are reported to have lost 42,000 men before Liege, and that Antwerp contained two German Corps till 10th October 1914, thereby exerting a decisive influence on the Marne battle. Little is said of the effect of the Lodz fortress. Colonel Neame says, "Although new weapons of war may have nullified the existing type of fortress, there can be no doubt that permanent fortification adapted to modern requirements will have an important influence in future wars."

The paragraphs on the personality and character of various Commanders are of great interest. Schlieffen, Moltke, Falkenhayn and Ludendorff are all discussed. Five pages are devoted to Ludendorff's career and character. His position *vis-à-vis* Hindenburg is compared to that of Gneisenau and Blücher, but it is stated to be more nearly that of the greater Moltke with Emperor William I in 1866 and 1870. His personal courage, readiness to assume responsibility and driving power were all demonstrated in the Great War. He laboured unceasingly and loyally for his country. His faults seem to lie in his egotism, in his occasional lack of judgment of moral factors and in his interference in matters of policy. No mention is made of his judgment of character or selection of personnel. There appears to be no doubt that he was most careful in the selection of his staff and that he was well served throughout the war.

Knowing Ludendorff's strength of character and also that he was an ardent disciple of Schlieffen and his war plan, the author invites us to consider what would have happened if Ludendorff had been Director of Military Operations in August 1914?

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Colonel Neame continually stresses the fact that "Tactical success and good strategical plans are bound up together, one is no good without the other." In this connection we may remember that Ludendorff failed to succeed in his attack at Rheims on 15th July, and also to defeat Foch's counter-stroke between Soissons and Château Thierry on 18th July. For this he blames the German troops, but the real fault lay in the fact that these troops were trained as two armies, one to attack and one to hold the line. The latter came into action against unforeseen Allied attacks with dire results. Another reason for the German defeat was Ludendorff's failure to keep up to date in the modern methods of warfare and his under-estimation of the value of tanks.

This book will be of value not only to the officer but also to the layman and will provide a sound basis for more detailed study of the various campaigns.

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THE OFFICIAL HISTORY OF AUSTRALIA IN THE WAR, 1914—1918.

VOLUME XII, PHOTOGRAPHIC RECORD OF THE WAR

(Messrs. Angus and Robertson, Sydney, N.S.W., 21s.)

This volume contains over 700 photographs dealing with the operations of Australian troops in all theatres, and in it is included a limited number of pictures dealing with early recruitment in Australia and also with the home coming of the troops after the War. It is pleasing to note that the sterling services of the Australian women, who served as nurses and in connexion with the provision of comforts in Australia, England and Egypt, have received their due share of recognition.

The arrangement of the pictures is excellent and the letter press and explanatory notes are so good that the volume forms not only a cherised record for those of the Australian forces or their immediate relatives, but also a valuable book of reference for the student of military history.

The pictures themselves give very many examples of troops in action under, at times, heavy shell fire, and no doubt heavy machine gun and rifle fire, to which the intrepid photographers must have been frequently exposed in carrying out their task Of necessity, there are many grim reminders of the horrors of war and of the appalling conditions of trench warfare in winter in devastated areas.

There could be no more eloquent testimony than that given photographically of the spirit of our comrades in arms from the Dominions. The light-hearted enthusiasm of the first months of the war gradually gives place to an indomitable spirit of grim determination to win. It is possible to follow the steady progress in efficiency of the Australian fighting forces, culminating in the magnificent exlpoits round Amiens in March 1918, when the German thrust was definitely checked and thereafter in the exploitation of a victorious advance begun on the 8th August of that year.

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It is to be regretted that the camera fails hopelessly to convey to those, who have not seen the ground, the magnificent exploit of crossing the Somme and the capture of Mont St. Quentin overlooking Peronne as no doubt it fails to give the fullest idea of the landing and subsequent fighting at Gallipoli.

To those who have not the leisure or the inclination to dig deeply into the detailed events of the war, the book provides a ready reference and is worthy of a place in every collection of modern military works.

From a purely military point of view, the value of the book in its present form at once gives rise to the hope that a much larger edition will be published giving enlarged photographs and that something may be done further to enhance the value of the pictorial record by producing for the Army, lantern slides of the many pictures of troops in action.

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"SOME PITFALLS OF ARMY ACCOUNTS."

By Captain G. L. Parker, R.G.A., with foreword, by Lieut.-General Sir Ivor Maxse.

Although the majority of regimental officers are responsible in peace for some accounts, the method of keeping accounts generally receives little attention. Captain Parker in his book of 48 pages has succeeded in making this subject of interest. The various pay books and accounts for which regimental officers in peace may be responsible are described in clear detail, and the regulations governing them explained. To obtain full value of the author's knowledge, copies of the forms used should be at hand to study.

The necessity for tidy and accurate accounts methodically compiled is emphasised. Officers will be interested to read the examples showing that negligence starting in minor matters may lead to the payment of large sums by the commander responsible and even to expulsion from the service.

The Section headed "Points to watch on taking over a unit" is of particular interest.

If this book were in every regimental orderly room and company, etc., office, much unnecessary correspondence and discomfort would be saved.

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"MILITARY LAW MADE EASY."

By Lieut.-Colonel S. T. Banning, C.B.E. (Thirteenth Edition), Published by Messrs. Gale and Polden, London, Aldershot and Portsmouth.

Many of the officers now serving in India have sat at the feet of Lieut.-Colonel Banning at Sandhurst and learnt from his able teaching their first lessons in Military Law.

Many too have profited when working for examinations from the previous editions of this work, in which this necessarily rather dry subject is treated ably and concisely.

This new edition has been rendered necessary by the issue in 1923 of new editions of the Royal Warrant and of King's Regulations. The Annual Army Acts have also made several important amendments in Military Law and in the Rules of Procedure, which are shown in the new edition of "Military Law made easy."

At the present time it is hardly necessary to lay stress on the necessity for an accurate knowledge of military law and its procedure, both to avoid miscarriage of justice and to disarm criticism on the part of those whose political convictions cause them to desire to lessen the powers of the military authorities in the maintenance of discipline.

The new edition will be found of great value to officers who are studying for examinations or who otherwise wish to refresh their knowledge of this important subject.

The printing and general get-up of the book are a credit to the well-known firm which has published it.

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THE GENESIS OF THE WAR.

Rt. Hon. H. H. Asquith, M.P.

It is hardly necessary to say that Mr. Asquith's book is written in polished English and has been compiled with the utmost care. Each argument is presented in a most convincing form and the reader is under a debt of gratitude to the writer for concise and interesting information concerning the events which led to the outbreak of war.

The soldier, primarily concerned with what happened during the war and realising that he can never hope to read more than a fraction of the valuable works relating to the events of 1914—18, has but little time for studying the European situation that led to the war. Mr. Asquith has, as it were, made a précis of the subject and by waiting till after continental statesmen published their books, has made use of their own confessions to refute the clumsy apologia of the Germans. He deals with them in a spirit of moderation producing step by step evidence that condemns every action of the German War party.

It is interesting to follow the preparations made by Great Britain and to compare the action of the Germans in educating the people to back up and pay for their pre-war measures with our own precautions.

His reference to Lord Roberts' efforts to arouse the country to the necessity of being ready for war by land as well as by sea is a trifle ungenerous.

Four chapters devoted to pre-war preparation are noteworthy at the present time, now that we have seen pass five of the ten years, in which it has been so freely stated that no Great War can occur, when we see the powers launching out on schemes for huge aerial fleets, when experts disagree as to the future of the battle-ship and the submarine and when science vaguely hints at the amazing possibilities of gas warfare.

Printed at the Pioneer Press, Allahabad, by C. G. Harris, No. 459—14-4-'24.
Published by ——— ——— ——— ———

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Vol. LIV. JULY, 1924. No. 236

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The Journal of the United Service Institution of India



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3. Military Reading.—Lieut.-Colonel A. B. Beauman, D.S.O.
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5. Lewis Gun Organisation and Training.—Major J. G. Lecky.
6. Communications.—Lieut.-Colonel M. Crofton, D.S.O.
7. Evolution of Signals.—Captain W. R. C. Penney, M.C.
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Reviews.

Printed by C. G. Harris at thePioneer Press, Allahabad, and published by Major C. A. Bird, R.E., for the United Service Institution of India, Simla.

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United Service Institution of India.

RULES OF MEMBERSHIP.

ALL officers of the Royal Navy, Army, Royal Air Force, Colonial Forces, and of the Auxiliary Force, India, and Gazetted Government Officers shall be entitled to become members without ballot, on payment of the entrance fee and annual subscription.

The Council shall have the power of admitting as honorary members the members of the Diplomatic Corps, foreign naval and military officers, foreigners of distinction, other eminent individuals, and benefactors to the Institution, not otherwise eligible to become members.

Life Members of the Institution shall be admitted on the following terms:—

Rupees 120 + entrance fee (Rs. 10) = Rs. 130.

Ordinary members of the Institution shall be admitted on payment of an entrance fee of Rs. 10 on joining, and an annual subscription of Rs. 10, *to be paid in advance*. The period of subscription commences on 1st January.

Subscribing members of the Royal United Service Institution, Whitehall, London, are not liable for entrance fee while the affiliation rules are in force.

Life members receive the Journal of the Institution post free anywhere, but ordinary members only in India. All members may obtain books from the library on paying V.-P. postage.

Honorary Members shall be entitled to attend the lectures and debates, and to use the premises and Library of the Institution without payment; but should they desire to be supplied with the Journal, an annual payment of Rs. 10, *in advance*, will be required.

Divisional, Brigade and Officers' Libraries, Regimental Messes, Clubs, and other subscribers for the Journal, shall pay Rs. 10 per annum.

Sergeants' Messes and Regimental Libraries, Reading and Recreation Rooms shall be permitted to obtain the Journal on payment of an annual subscription of Rs. 8.

If a member fails to pay his subscription for any financial year (ending 31st December) before the 1st June in the following year, a registered notice shall be sent to him by the Secretary inviting his attention to the fact. If the subscription is not paid by 1st January following his name shall be posted in the Reading Room for six months and then struck off the roll of members.

Members joining the Institution on or after the 1st October, will not be charged subscription on the following 1st January, unless the Journals for the current year have been supplied.

Members are responsible that they keep the Secretary carefully posted in regard to changes of rank and address. Duplicate copies of the Journal will not be supplied free to members when the original has been posted to a member's last known address, and not been returned by the post.

Members or Subscribers to the Journal, intimating a wish to have their Journals posted to any address out of India, shall pay in advance Rupee 1 per annum, to cover foreign postage charges, but Life Members who have left India shall not be liable for foreign postage on Journals.

All communications shall be addressed to the Secretary, United Service Institution of India, Simla.

Contributions to the Journal.

All papers must be written in a clear, legible hand, and only on one side of the paper. All proper names, countries, towns, rivers, etc., must, when in manuscript, be written in capital letters. All plans must have a scale on them.

Contributors are responsible, when they send articles containing any information which they have obtained by virtue of their official positions, that they have complied with the provisions of A. R. I., Vol. II., para. 204, and King's Regulations, para. 509.

Anonymous contributions under a *nom-de-guerre* will not be accepted or acknowledged; all contributions must be sent to the Secretary under the name of the writer and the paper will, if accepted, be published under that name unless a wish is expressed for it to be published under a *nom-de-guerre*. The Executive Committee will decide whether the wish can be complied with.

The Committee reserve to themselves the right of omitting any matter which they consider objectionable. Articles are only accepted on these conditions.

The Committee do not undertake to authorise the publication of such papers as are accepted, in the order in which they may have been received.

Contributors will be supplied with three copies of their paper *gratis*, if published.

Manuscripts of original papers sent for publication in the Journal will not be returned to the contributor, unless he expresses a wish to have them back and pays the postage.

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I.—New Members.

The following new members joined the Institution from 2nd March 1924 to 6th June 1924:—

Life Members.

2nd-Lieut. T. H. Oung. Captain K. D. Marsland.
Captain G. G. Voelcker.

Ordinary Members.

Captain A. G. Armstrong.
Captain M. S. Adshead.
Lieut. O. L. Jones.
Lieut. D. McD. Life.
Captain A. G. Fuller.
Major D. M. Murray-Lyon.
Captain G. P. Pouncey.
Captain G. E. Tinney.
Major J. E. Waller.
Captain H. W. R. Hamilton.
Major J. I. Muirhead
Lieut. J. S. Jenkins.
Captain W. T. Bird.
Ft.-Lieut. J. B. Cob. Hamilton.
Captain E. Curnow.
Captain F. T. Drake-Brockman.
Lieut. E. E. French.
Captain A. B. Gibson.
Captain W. C. S. Haycroft.
Lieut. H. G. E. E. Jones.
Captain J. K. Lawson.
Lieut. J. O. L. Lawson.
Captain W. D. McGregor.
Captain G. L. Mould.
Lieut. J. A. L. Powell.
Captain R. M. Rodwell.
Captain C. D. G. Thorpe.
Captain C. G. D. Thrupp.
Lieut. A. H. Woodhouse.
Lieut. A. A. Dean.
Bt.-Lieut.-Col. H. E. Crocker.
Captain P. W. Perceval.
Lieut. H. G. Jagoe.
Major H. C. Ponsonby.
Captain G. W. A. Painter.
Captain W. F. Todd.
Captain E. C. Walters.
Captain J. Ray-Brown.
Lieut. H. J. Cooper.
Lieut. J. B. Cunningham.

Colonel C. H. K. Chauncy.

II.—Examinations.

Books on military history and languages with dictionaries are available in the Library and the following list of books, which is complete in accordance with the War Office List, may be found useful for reference by officers, studying for promotion examinations or entrance to the Staff College.

The following are the special periods of military history for the forthcoming promotion examinations (*vide* I. A. O. 409 and 497 of 1924.)

October 1924 ... Gallipoli Campaign (*vide* A. O. II of 1922.)

April 1925 ... (*i*) Gallipoli Campaign.

(*ii*) Russo-Japanese War, 1904, up to the battle of Liaoyang, inclusive.

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MILITARY HISTORY.

1. *The Campaign of the British Army in France and Belgium up to 20th November, 1914.*

A.—OFFICIAL ACCOUNT.

Sir John French's Despatches.

B.—OTHER BOOKS.

40 days in 1914, by General Maurice (new edition).

The Battle of the Marne, by G. H. Perris.

1914, by Viscount French.

General sketch of the European War, by Belloc.

The Great War, by Colonel Sedgwick.

My Memoirs, by Ludendorf.

Falkenhayn's Book.

Von Kluck's Book.

British Campaign in France, Flanders, by Conan Doyle, 1914.

Nelson's History of the War.

Ypres, by German General Staff.

Oxford pamphlets, August 1914. The Coming of the War, by S. Williamson.

Oxford pamphlets, August 1914, Nos. VII and X.

Times Documentary History of the War, Vol. V, Military, Part I.

Times Documentary History of the War, Vol. VIII, Part III.

Der Grosse Krieg Schlacht bei Mons.

Der Grosse Krieg Schlacht bei Longwy.

2. *The Palestine Campaign.*

A.—OFFICIAL ACCOUNT.

A brief record of the advance of the Egyptian Expeditionary Force, 1919.

B.—OTHER BOOKS.

Allenby's Final Triumph, by W. T. Massey.

How Jerusalem was Won, by W. T. Massey.

3. *The Gallipoli Campaign.*

Gallipoli Campaign (outline of military operations).

Official Despatches.

The Dardanelles (Callwell).

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Experience of a dugout (Callwell).
Despatches from the Dardanelles (Ian Hamilton).
Gallipoli Diary. („ „).

4. *The Russo-Japanese War, 1904, up to and including the battle of LIAOYANG.*

A Staff Officer's Scrapbook (Ian Hamilton).
German official account.
Lectures on the strategy of the Russo-Japanese War (Bird).
Question on the Russo-Japanese War (Brunker).
Official History.
Outline of the Russo-Japanese War (Ross).
A study of the Russo-Japanese War (Chasseur).
My experiences at Nan Shan and Port Arthur (Tretyakow).

5. *Organization of Army since* 1868.

A.—ORGANIZATION OF ARMY SINCE 1868.

History of British Army, by Fortescue.
Outline of Development of British Army, by Maj.-Genl. Sir W. H. Anderson.
Our Fighting Services, by Sir Evelyn Wood.

B.—FORCES OF THE EMPIRE.

The Statesman's Year Book.
Army List.
Articles in Newspapers and Magazines, *viz.*, R. U. S. I.
Army Quarterly, Journal of the U. S. I. of India, etc.

6. *Development and constitution of the British Empire.*

A.—THE BRITISH EMPIRE.

Encyclopædia Britannica—(contains much concentrated information).
The Statesman's Year Book.
Whitaker's Almanack.
The Colonial Office List.
The British Empire and its History, by E. G. Hawke.
The Government of the British Empire, by Jenks, 1918.
The British Empire (6 lectures) by Sir C. P. Lucas, 1918.
The foundation and growth of the British Empire, by J. A. Williamson, 1918.

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The beginnings of English Overseas Enterprise, by Sir C. P. Lucas, 1917.

The Government of England, by L. A. Lowell, 1912.

The Expansion of the British Empire, by W. H. Woodward, 1900.

Overseas Britain, by E. F. Knight, 1907.

The origin and growth of the English Colonies and of their system of Government, by H. E. Egerton, 1903.

A short History of Politics, by Jenks, 1900.

The English Constitution, by Bagehot, 1909.

The Expansion of England, by Sir J. Seely, 1883.

Introduction of the study of the law of the Constitution, by A. V. Dicey, 1908.

England in the Seven Years' War, Sir J. Corbett, 1907.

Selected Speeches and Documents on British Colonial Policy, 2 Vols., A. B. Keith, 1918.

B.—Books on Special Portions of the Empire or World.

The Rise and Expansion of British Dominions in India, by Sir A. C. Lyall, 1894.

A brief history of the Indian Peoples, by Sir W. H. Hunter, 1907.

The Nearer East, by Hogarth, 1902.

Modern Egypt, by Cromer, 1908.

The History of Canada, by W. L. Grant.

Nova Scotia, by B. Wilson, 1911.

Report on British North America, by Sir C. P. Lucas.

The Union of South Africa, by R. H. Brand, 1909.

Short History of Australia, by E. Scott.

History of the Australasian Colonies, by Jenks, 1912.

The English in the West Indies, by J. A. Froude, 1888.

The Lost Possessions of England, by W. F. Lord, 1896.

7. *Military Geography.*

Naval and Military Geography of the British Empire, by Dr. Vaughan Cornish, 1916.

Elementary Imperial Military Geography, by Capt. D. H. Cole, 1924.

Introduction of Military Geography, by Col. E. S. May.

Imperial Defence, by Col. E. S. May.

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Britain and the British Seas, by H. J. Mackinder, 1907.

Military Geography, by Macguire.

Imperial Strategy, by Repington.

War and the Empire, by H. Foster.

Historical Geography of British Colonies (Dominions), 7 Vols., by Sir C. P. Lucas, 1906—17.

Vol. 1, Mediterranean.
Vol. 2, West Indies.
Vol. 3, West Africa.
Vol. 4, South Africa.
Vol. 5, Canada.
Vol. 6, Australia.
Vol. 7, India.

The Influence of Sea Power on History, by A. I. Mahan, 1890.

Historical Geography of the British Empire, by Hereford George.

The Mastery of the Pacific, by A. R. Colquhoun, 1902.

Frontiers, by C. B. Fawcett, 1918.

III.—Payment for Articles in the Journals.

Articles accepted for publication in the Journal are paid for, and a sum of approximately Rs. 400 is awarded for articles and reviews published in each Quarterly Journal.

IV.—Contributions to the Journal.

Articles submitted for publication must be typed in *duplicate*. With reference to Army Regulations, India, Volume II, paragraph 204 and King's Regulations, paragraph 509, action to obtain the sanction of His Excellency the Commander-in-Chief to the publication of any article in the Journal of the United Service Institution of India will be taken by the Committee.

Instructions for the preparation of drawings and plans for reproduction by lithography.

These should be in *jet* black. No washes nor ribands of colour should on any account be used.

If it is absolutely necessary to use colour (and these are only permissible in line work or names) the following will reproduce photographically, *i.e.*:—

Dark red, dark orange, dark green. No other colour should on any account be used.

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V.—Library Rules.

1. The Library is only open to members and honorary members of the United Service Institution of India, members are requested to look upon books as not transferable to their friends.

2. No book shall be taken from the Library without making the necessary entry in the register. Members residing permanently or temporarily in Simla are requested to enter their addresses.

3. The United Service Institution of India is open all the year round—including Sundays—from 9 A.M. until sunset. Books may be taken out at any time provided Rule 2 is complied with.

4. A member shall not be allowed, at one time, more than three books or sets of books.

5. Papers, magazines, "works of reference" or books marked "Not to be taken away," or noted as "Confidential" may not be removed.

6. No particular limit is set as to the number of days for which a member in Simla may keep a book, the Council being desirous of making the library as useful as possible to members; but if after the expiration of a fortnight from date of issue it is required by any other member it will be re-called.

7. Applications for books from members at out-stations are dealt with as early as possible, and books are despatched per Registered V.-P. P. They must be returned carefully packed per Registered Parcel Post within one month of date of issue, or application made for permission to retain them for a further period. This will always be granted unless the book is required by another member.

8. If a book is not returned at the end of four months, it must be paid for without the option of return, if so required by the Executive Committee.

9. Lost and defaced books shall be replaced at the cost of the member to whom they were issued. In the case of lost books which are out of print the value shall be fixed by the Executive Committee, and the amount, when received, spent in the purchase of a new book.

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10. The issue of a book under these rules to any member implies the latter's compliance with the rules, and the willingness to have them enforced, if necessary, against him.

11. A list of all books presented and purchased and also a list of books useful to members studying for the Staff College and promotion examinations will be found, under Secretary's Notes, in the quarterly issue of the U. S. I. Journal. Members are invited to note any books which they think might with advantage be pro cured for the Institution. The suggestions will be placed before the Secretary.

12. Members are invited to contribute presents of books, maps, and photographs of naval and military interest. These may be addressed to the Secretary, U. S. I. of India, Simla. They will be duly acknowledged.

VI.—Library Catalogue.

Under Revision. The new catalogue will be available shortly.

VII.—Gold Medal Prize Essay.

The following essays have been received for the 1923-24 competition:—

1. Solvitur Ambulando.
2. Fortes Fortuna Adjuvat.
3. Delhi Dur Hai.
4. Administer a country as you would cook a small fish—don't ever do it.
5. The mills of God grind slowly but they grind exceedingly small.
6. Exitus acta probat.
7. Sublata causa tollitur effectus.
8. In administration as in war, character is essential to success.

VIII.—Army List pages.

The U. S. I. is prepared to supply members and units with manuscript or type-written copies of Indian Army List pages, at the following rate:—

Type-written, per page, Rs. 2.

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IX.—List of books purchased.

BOOKS PURCHASED.

Serial No.	*Title.*	*Author.*
1	On the Art of Writing ...	Quiller-Couch.
2	Shackleton's Last Voyage ...	F. Wild.
3	Instruction Provisoire, Sur less exercises et la Manœuvre de la Cavalerie.	"Official."
4	Official German War Documents relating to the World War, 2 Vols.	"Official."
5	The Indian School Atlas ...	J. Bartholomew.
6	A Consul in the East ...	A. C. Wratislaw.
7	When Kings rode to Delhi ...	G. Festing.
8	East Persia	W. E. R. Dickson.
9	The Lost Dominion ...	Al. Carthill.
10	The Blocking of Zeebrugge ...	A. F. B. Carpenter.
11	Official Naval History of the War, Vol. 3.	Sir J. Corbett.
12	Democracy & Labour ...	F. J. C. Hearshaw.
13	Indian Politics ...	J. T. Gwynn.
14	Outlines of Political Economy ...	S. J. Chapman.
15	Regulations for the Allowances of the Army (1924).	"Official."
16	The Indian Year Book, 1924 ...	Sir S. Reed.
17	French-Eng-Eng-French Dictionary (1908).	J. Boielle and de V. Payen-Payne.
18	Essays and Essay Writing (1921)	A. W. Ready.
19	Aids to Retention Examination (1923).	"Kashi."

Books Presented.

1	India's Fighters	St. Nihal Singh.
2	The King's Indian Allies ... (Presented by the Publishers Messrs. Sampson, Low, Marston & Co., London.)	Do.

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Books Presented.

Serial No.	Title.	Author.
3	Wonders of the Himalaya ... (Presented by John Murray, Publisher, London.)	Sir F. Younghusband.
4	Report on the Military College of Australia, 1922-23. (Presented by Hon'ble Minister of Defence, Royal Military College, Duntroon.)	F. Heritage, Comdt., R. M. College.
5	Staff College Examination Reports, 1924, Camberley and Quetta. (Presented by Director of Staff Duties, War Office.)	"Official."
6	Work of the R. E. in the European War, 1914—19, Vol. 8, 1924. (Presented and published by the Secretary, R. E. Institution, Chatham.)	
7	History of the Queen's Own Royal West Kent Regiment, 1914—1919. (Presented by Col. C. Bonham-Carter.)	C. T. Atkinson.
8	Historical Record of the 4-5th Mahratta Light Infantry. (Presented by the Adjutant of the Regiment.)	Compiled from various sources by Captain A. R. Solly.
9	Pioneers on Four Fronts ... (Presented by Col. Marjoribanks.)	E. Haward.

Books on Order.

1	Economies of the Hour ...	J. St. Loe Strachey.
2	Report of the Sub-Committee of Imperial Defence on National and Imperial Defence, 1924.	"Official."

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Books on Order.

3	Out of my Life	Hindenburg.
4	Mastery of the Far East ...	A. J. Brown.
5	The Salonika Front... ...	...
6	Our Italian Front	...
7	My Mission to Russia ...	Sir G. Buchanan.
8	The European States System ...	R. B. Mowat.
9	The Common Weal	Rt. Hon'ble H. A. L. Fisher.
10	A Field Artillery Group in Battle	Lt.-Col. W. H. F. Weber.

X.—Pamphlets.

A pamphlet showing the latest road space tables and camping spaces is in preparation and will shortly be available for sale to members.

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Prize Essay Gold Medalists.

(With rank of Officers at the date of the Essay.)

1872..Roberts, Lieut-Col. F. S., V.C., C.B., R.A.
1873..Colquhoun, Capt. J. S., R.A.
1874..Colquhoun, Capt. J. S., R.A.
1879..St. John, Maj. O. B. C., R.E.
1880..Barrow, Lieut. E. G., 7th Bengal Infantry.
1882..Mason, Lieut. A. H., R.E.
1883..Collen, Maj. E. H. H., S.C.
1884..Barrow, Capt. E. G., 7th Bengal Infantry.
1887..Yate, Lieut. A. C., 27th Baluch Infantry.
1888..Maude, Capt. F. N., R.E.
Young, Maj. G. F., 24th Punjab Infantry (specially awarded a silver medal).
1889..Duff, Capt. B., 9th Bengal Infantry.
1890..Maguire, Capt. C. M., 2nd Cav., Hyderabad Contingent.
1891..Cardew, Lieut. F. G., 10th Bengal Lancers.
1893..Bullock, Maj. G. M., Devonshire Regiment.
1894..Carter, Capt. F. C., Northumberland Fusiliers.
1895..Neville, Lieut.-Col. J. P. C., 14th Bengal Lancers.
1896..Bingley, Capt. A. H., 7th Bengal Infantry.
1897..Napier, Capt. G. S. F., Oxfordshire Light Infantry.
1898..Mullaly, Maj. H., R.E.
Clay, Capt. C. H., 43rd Gurkha Rifles (specially awarded a silver medal).
1899..Neville, Col. J. P. C., S.C.
1900..Thuillier, Capt. H. F., R.E.
Lubbock, Capt. G., R.E. (specially awarded a silver medal).
1901..Ranken, Lieut.-Col. G. P. P., 46th Punjab Infantry.
1902. Turner, Capt. H. H. F., 2nd Bengal Lancers.
1903..Hamilton, Maj. W. G., D.S.O., Norfolk Regiment.
Bond, Capt. R. F. G., R.E. (specially awarded a silver medal).
1904..Macmunn, Maj. G. F., D.S.O., R.F.A.
1905..Cockerill, Maj. G. K., Royal Warwickshire Regiment.
1907..Wood, Maj. E. G. M., 99th Deccan Infantry.
1908. Jeudwine, Maj. H. S., R.A.
1909..Molyneux, Maj. E. M. J., D.S.O., 12th Cavalry.
Elsmie, Maj. A. M. S., 56th Rifles, F. F. (specially awarded a silver medal).
1911..Mr. D. Petrie, M.A., Punjab Police.
1912..Carter, Maj. B. C., The King's Regiment.
1913..Thomson, Maj. A. G., 58th Vaughan's Rifles (F.F.).
1914. Bainbridge, Lieut.-Col. W. F., D.S.O., 51st Sikhs (F.F.).
Norman, Maj. C. L., M.V.O., Q.V.O., Corps of Guides (specially awarded a silver medal).
1915..No Award.
1916..Crum, Maj. W. E., V.D., Calcutta Light Horse.
1917..Blaker, Maj. W. F., R.F.A.
1918..Gompertz, Capt. A. V., M.C., R.E.
1919..Gompertz, Capt. M. L. A., 108th Infantry.
1920..Keen, Lt.-Col. F. S., D.S.O., 2/15th Sikhs.
1921..No Award.
1922..Martin, Maj. H. G., D.S.O., O.B.E., R.F.A.
1923..Keen, Colonel F. S., D.S.O., I.A.

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MacGREGOR MEMORIAL MEDALS.

1. The MacGregor Memorial Medal was founded in 1888 as a memorial to the late Major-General Sir Charles MacGregor. The medals are awarded for the best military reconnaissances or journeys of exploration of the year.

2. The following awards are made annually in the month of June:—

(*a*) For officers—British or Indian—silver medal.

(*b*) For soldiers—British or Indian—silver medal, with Rs. 100 gratuity.

3. For specially valuable work a gold medal may be awarded in place of one of the silver medals, or in addition to the silver medals, whenever the administrators of the fund deem it desirable. Also the Council may award a special additional silver medal, without gratuity, to a soldier, for special good work.

4. The award of medals is made by His Excellency the Commander-in-Chief as Vice-Patron, and the Council of the United Service Institution who were appointed administrators of the Fund by the MacGregor Memorial Committee.

5. Only officers and soldiers belonging to the Army in India (including those in civil employ) are eligible for the award of the medal.*

6. The medal may be worn in uniform by Indian soldiers on ceremonial parades, suspended round the neck by the ribbon issued with the medal.

Note.

(*i*) Personal risk to life during the reconnaissance or exploration is not a necessary qualification for the award of the medal; but in the event of two journeys being of equal value, the man who has run the greater risk will be considered to have the greater claim to the reward.

(*ii*) When the work of the year has either not been of sufficient value or has been received too late for consideration before the Council Meeting, the medal may be awarded for any reconnaissance during previous years considered by His Excellency the Commander-in-Chief to deserve it.

MacGregor Memorial Medalists.

(With rank of officers at the date of the Award.)

1889..BELL, Col. M. S., V.C., R.E. (specially awarded a gold medal).

1890..YOUNGHUSBAND, Capt. F. E., King's Dragoon Guards.

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* *N.B.*—The terms "officer" and "soldier" include those serving in the British and Indian armies and their reserves, also those serving in Auxiliary Forces, such as the Volunteers and Corps under Local Governments, Frontier Militia, Levies and Military Police, also all ranks serving in the Imperial Service Troops.

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MacGregor Memorial Medalists—*(contd.)*.

1891..Sawyer, Major H. A., 45th Sikhs.
Ramzan Khan, Havildar, 3rd Sikhs.

1892..Vaughan, Capt. H. B., 7th Bengal Infantry.
Jaggat Singh, Havildar, 19th Punjab Infantry.

1893..Bower, Capt. H., 17th Bengal Cavalry (specially awarded a gold medal).
Fazaldad Khan, Dafedar, 17th Bengal Cavalry.

1894..O'Sullivan, Major G. H. W., R.E.
Mull Singh, Sowar, 6th Bengal Cavalry.

1895..Davies, Capt. H. R., Oxfordshire Light Infantry.
Ganga Dyal Singh, Havildar, 2nd Rajputs.

1896..Cockerill, Lieut. G. K., 28th Punjab Infantry.
Ghulam Nabi, Sepoy, Q. O. Corps of Guides.

1897..Swayne, Capt. E. J. F., 10th Rajput Infantry.
Shahzad Mir, Dafedar, 11th Bengal Lancers.

1898..Walker, Capt. H. B., Duke of Cornwall's Light Infantry.
Adam Khan, Havildar, Q. O. Corps of Guides.

1899..Douglas, Capt. J. A., 2nd Bengal Lancers.
Mihr Din, Naik, Bengal Sappers and Miners.

1900..Wingate, Capt. A. W. S., 14th Bengal Lancers.
Gurdit Singh, Havildar, 45th Sikhs.

1901..Burton, Maj. F. B., 17th Bengal Lancers.
Sundar Singh, Colour Havildar, 31st Burma Infantry.

1902..Ray, Capt. M. R. E., 7th Rajput Infantry.
Tilbir Bhandari, Havildar, 9th Gurkha Rifles.

1903..Manifold, Lieut.-Col. C. C., I.M.S.
Ghulam Hussain, Lance-Dafedar, Q. O. Corps of Guides.

1904..Fraser, Capt. L. D., R.G.A.
Moghal Baz, Dafedar, Q. O. Corps of Guides.

1905..Rennick, Maj. F., 40th Pathans (specially awarded gold medal).
Madho Ram, Havildar, 8th Gurkha Rifles.

1906..Shahzada Ahmad Mir, Risaldar, 36th Jacob's Horse.
Ghafur Shah, Lance-Naik, Q. O. Corps of Guides Infantry.

1907..Nangle, Capt. M. C., 92nd Punjabis.
Sheikh Usman, Havildar, 103rd Mahratta Light Infantry.

1908..Gibbon, Capt. C. M., Royal Irish Fusiliers.
Malang, Havildar, 56th Punjab Rifles.

1909..Muhammad Raza, Havildar, 106th Pioneers.

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MacGregor Memorial Medalists—(*concld.*).

1910..Sykes, Maj. M., C.M.G., late 2nd Dragoon Guards (specially awarded a gold medal).

Turner, Capt. F. G., R.E.

Khan Bahadur Sher Jung, Survey of India.

1911..Leachman, Capt. G. E., The Royal Sussex Regiment.

Gurmukh Singh, Jemadar, 93rd Burma Infantry.

1912..Pritchard, Capt. P. P. A., 83rd Wallahjabad Light Infantry (specially awarded a gold medal).

Wilson, Lieut. A. T., C.M.G., 32nd Sikh Pioneers.

Mohibulla, Lance-Dafedar, Q. V. O. Corps of Guides.

1913..Abbay, Capt. B. N., 27th Light Cavalry.

Sirdar Khan, Sowar, 39th (K.G.O.) Central India Horse.

Waratong, Havildar, Burma Military Police (specially awarded a silver medal).

1914..Bailey, Capt. F. M., I.A. (Political Department).

Morshead, Capt. H. T., R.E.

Haidar Ali, Naik, 106th Hazara Pioneers.

1915..Waterfield, Capt. F. C., 45th Rattray's Sikhs.

Ali Juma, Havildar, 106th Hazara Pioneers.

1916..Abdur Rahman, Naik, 21st Punjabis.

Zarghun Shah, Havildar, 58th Rifles (F. F.) (specially awarded a silver medal).

1917..Mian Afraz Gul, Sepoy, Khyber Rifles.

1918..Noel, Capt. E. W. C. (Political Department).

1919..Keeling, Lt.-Col. E. H., M.C., R.E.

Alla Sa, Jemadar, N.-E. Frontier Corps.

1920..Blacker, Capt. L. V. S., Q. V. O. Corps of Guides.

Awal Nur, C. Qm. Havildar, 2nd Bn., Q. V. O. Corps of Guides. (Special gratuity of Rs. 200.)

1921..Holt, Major A. L., Royal Engineers.

Sher Ali, Sepoy No. 4952, 106th Hazara Pioneers.

1922..Abdul Samad Shah, Capt., O.B.E., 31st D. C. O. Lancers.

Nur Muhammed, Lance-Naik, 1st Guides Infantry, F. F.

1923..Bruce, Capt. J. G., 2/6th Gurkha Rifles.

Sohbat, Head Constable, N.-W. F. Police.

Hari Singh Thapa, Survey Department.

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The Journal

OF THE

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EDITORIAL.

Through unforeseen and unavoidable circumstances, no editorial was included in the April number, with the result that, to bridge the gap, it is necessary to consider events of the past six months.

It is only on looking back over this period that we realise the importance of some of those events in relation to the Services.

First and foremost we would place the advent of a Labour Government, not from the point of view of the attitude of such a Government towards the Services themselves but on account of the liability of such a Government to change the policy of its predecessors in foreign and colonial affairs.

It is generally accepted that service journals should not concern themselves with politics, and we are in entire agreement; but there is a tendency to confuse "politics" and "policy", and it is urged that a study of the "policy" of the government of the day is essential to those in the Services, because on this policy are based the plans for the employment of the services when required, and any modification in such policy must in turn affect the plans.

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It is satisfactory that some progress, however slight, has at last been made in the matter of Reparations Settlement.

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The Dawes report appears to have provided a basis on which both sides are willing to work, but progress has been delayed for the moment by the elections first in Germany and then in France, the latter resulting in the unexpected fall of M. Poincare.

The outlook can at least be described as more hopeful than it has been for some time past, the comparative stabilisation of the German exchange being an indication in this direction.

Events move so rapidly that any book on the subject is likely to be quite out of date before it appears in print. An exception is "The present state of Germany" by Brigadier General J. H. Morgan, who has spent several years in Germany since the War with the Allied Mission of Control.

This little book is a reprint of a lecture given by the author in London, with an added foreword, and we commend it to those who require information on the fundamental points of the situation.

It has now been decided not to proceed with the work of providing a base at Singapore capable of accommodating the largest type of battleship, and this decision appears to be "permanent for the time being", to quote the reply given recently to a question in the Legislative Assembly.

Much has been said and written on the subject of Singapore, and in this connection the account in the latest Journal (May 1924) of the Royal United Service Institution, of a debate between Admiral Mark Kerr and Captain Lord Curzon is of considerable interest.

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Another matter of great importance which has been outstanding for some time is the problem of co-ordination of the defence forces. This was settled by the approval by His Majesty's Government of the recommendations made on the subject by the National and Imperial Defence Committee*.

* Presented to Parliament in Command Paper No. 1938 of 1923. H. M. Stationery Office, price 6*d*.

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Attention has already been drawn to these decisions in various publications, but no excuse is required for once more drawing attention to them, although space will not permit their publication here.

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The negotiations with the Turks on the subject of the future of Mosul, which were recently opened in accordance with the Treaty of Lausanne, have unfortunately broken down, and must apparently wait until the subject can be regarded from more convergent points of view.

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The trend of future warfare is dealt with in a paper by Major-General Sir E. Ironside, Commandant of the Camberley Staff College, which he has prepared for the Royal Artillery Institution, and it is interesting to compare the views expressed with those contained in a lecture on "Air Strategy" by Wing Commander Edmonds, D.S.O., O.B.E, republished in the Royal United Service Institution Journal for May 1924.

We would draw attention to the articles in this number by Colonel-Commandant MacNamara and Lieutenant-Colonel Beauman on the subject of working for the Staff College and other examinations, and on reading, respectively.

It is one of the defects—not to put it more strongly—in the early education of at least the majority of us, that we are not taught how to read. Some have a "talent" or "natural bent" for reading which may or may not receive encouragement. Those who have not, are given little or no opportunity to cultivate it. Now a days when the amount to be read is so great, and the time for doing it is so limited, it is more than ever important that the latter be used to the best advantage, and it is hoped that Colonel Beauman's paper will lead to further suggestions.

Another aspect of this question is the provision of facilities for getting books. They are expensive, and funds are limited, so that it is necessary to discriminate carefully in purchasing. At the same time it is essential to keep up to date, and it seems probable that District libraries may require a thorough overhaul.

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As we go to press we have received from the publishers copies of "Egypt and the Army" by Lieutenant-Colonel P. C. Elgood and "The Story of the Empire" by Sir Charles Lucas, this being No. 2 of the series of 12 volumes which are in preparation, in connection with the Wembley Exhibition, with a view to presenting a comprehensive survey of the British Empire. Reviews will appear in the October Journal, but the importance of these books merits a reference to them here. We would also draw attention to the Report of the Committee on Administration and Army Accounts, a review of which appears in this number.

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There has been a gratifying increase in membership, but we still need all the support possible, and it is hoped that members will do their best to bring the Institution to the notice of others, and so help to increase the numbers still further. A change has been made in the application form issued with the Journal, and it is hoped that this will save time and trouble. The fee for Life Membership has now been increased from Rs. 75 to Rs. 120 in order to bring it more into line with the increase in the ordinary annual subscription which took place a few years ago.

A considerable number of subscriptions are still in arrears, and members are requested to send remittances or to instruct their bankers to do so as soon as possible.

* * * * * *

One word more. Will those who kindly contribute articles go through them carefully before submitting them. Admitting that it is the Editor's business to edit, the time available is limited and the more time that has to be spent on editing, which others can do, the less there is available for those duties which the editor cannot delegate.

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THE OPERATIONS ROUND VALENCIENNES BY THE FIRST ARMY, OCTOBER-NOVEMBER 1918.

A STUDY IN CO-OPERATION.

By Major-General Sir W. H. Anderson, K.C.B. (late M. G., General Staff, First Army).

The map of the general progress of the British Armies in France, August—November 1918, shows the general lines held by our troops on the mornings of 15th May, 8th and 26th August, 2nd and 27th September, 23rd October and 1st November and, finally, at 11 A.M., on Armistice Day, 11th November.

Between the 27th September and 19th October were fought the great battles of the Hindenburg line, which broke through the last of the German organised defensive system, and secured the line St. Quentin-Cambrai. Cambrai fell on 9th October.

Further north the French, Belgians and Second Army drove back the enemy in the battles of Ypres and Courtrai, 28th September—14th October.

As a result of these successes the Germans withdrew in the centre, opposite the Fifth Army and the left and centre of the First Army; while the main advance of the First French, Fourth, Third and right of First Army was continued in the battle of the Selle, 17th—25th October.

By the 25th October the British Armies held the line of the Sambre River, West edge of Foret de Mormal, West of Valenciennes, West of Scheldi and East of Courtrai.

The result of the battle of the Hindenburg line on the south (27th September—9th October) and of the battle of Courtrai on the north (28th September—14th October) forced the Germans to withdraw fighting from the big Douai salient between these two battle areas.

Lens fell on 2nd October, Cambrai on the 9th October, Douai on the 15th, Denain on the 20th, and by the 22nd the centre

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and left of the First Army were well up in line with the general British front to the south.

First Army situation, 27th October 1918.—Now let us consider in detail the situation of the First Army on the 27th October.

Throughout its front, from Maulde on the north past Valenciennes to opposite Artres on the south—a front of 37,000 yards or 21 miles, the First Army was now in touch with the enemy's position on the Escaut (Scheldt), North of Valenciennes, the enemy's defences ran along the east of the Escaut, as far north as the old frontier fortress of Condé. North of Condé they continued along the eastern bank of the Jard canal, which runs parallel to the Escaut, and separated from it by some 200 yards of marshy ground.

Both banks of the canal were heavily wired, and the eastern bank was defended by trenches. The houses, walls, and factories of Valenciennes, and of the towns and villages north of it were loopholed, and prepared for defence, and garrisoned by numerous machine guns. The old fortifications of Valenciennes and Condé, which commanded the important road and railway crossings over the Escaut were still intact, and capable of withstanding a heavy bombardment. All bridges over the canals had been destroyed, sluices opened, and gaps cut in the banks, so that the country on both sides of the Escaut was flooded throughout the Army front, in many places to a width of some hundreds of yards. Immediately north of Valenciennes, the floods in the angle between the Escaut and the Condé canal (running east from Condé) covered several square miles, and entirely safeguarded the town from a turning movement from the north.

In the face of such obstacles, a direct assault, with a view to forcing the passage of the canal offered no prospects of success, the less so, because the employment of heavy artillery or gas shells against the towns and villages was precluded by the presence of numerous French civilians.

South of Valenciennes, the Escaut no longer lay as an obstacle to be crossed (except for a mile and a half), but it separated the XXII Corps, on the East, from the Canadian Corps on the West,

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and the paucity of the bridges rendered co-operation between these two formations difficult. Here the problem was a different one. The German defences left the Escaut. A carefully prepared line of wired trenches facing the canal ran south along the high ground east of the Escaut, while another line, consisting of short-lengths of trenches, hastily prepared, and only partially wired, left the former system about 2 miles south of Valenciennes and ran in a south-easterly direction.

The fighting of the 24th—26th October had placed the first system of defences, south of Famars in the hands of the XXII Corps, but the enemy still retained possession of the defences of Mont Houy rising ground dominating Valenciennes from the south at a distance of some three miles.

The XXII Corps were now looking down on to the Rhonelle river; but resistance had been stouter during the 26th, and the 4th and 51st Divisions of that Corps had been heavily counter attacked; the enemy were evidently beginning to feel the pressure on Valenciennes, and were determined to prolong their hold on so important a centre.

The capture of Mont Houy was essential for the capture of either of the two lines of defence and was a necessary preliminary to the capture of Valenciennes and the turning of the line of the Escaut.

Its commanding position dominated both the town, and the valley of the river; and safeguarded observation up the Rhonelle valley, and over the platean towards Saultain and Curgies on which were situated the bulk of the German gun positions.

As a defensive position it had many advantages. On the west and south-west it was covered by the flooded Escaut, and protected by a strong line of wire and trenches. Deep cover trenches for supports had been constructed in the wood crowning the hill, which with its thick undergrowth presented a difficult obstacle to movement.

The ground slopes steeply down to the Escaut on the west, and south-west: less steeply to the south, and gently to the south-

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east towards Famars, and to the north towards the southern suburbs of Valenciennes.

But its commanding and isolated position made it an easy target for a concentration of Artillery from south, south-west, west and north-west; with direct observation from the far side of the Escaut—and by a strange belief in the purely frontal tactics of the British, its main defences faced due west, where the flooded river presented a sufficient guarantee against direct attack.

Appreciation by Army Commander, First Army, 26th October.—The continued successes of the Fourth and Third Armies to the south of the First Army made it clear to the Army Commander that objectives further east for a general advance of the three armies, might shortly be expected from G. H. Q. If the First Army was to keep abreast of the advance to the south, and continue to safeguard the northern flank of the Third Army, the early capture of Valenciennes, with its net work of main communications across the Escaut was essential.

The capture of the high ground at Mont Houy, and offensive operations from the south by the right of the First Army on the east of the Escaut, and the left Corps of the Third Army (XVII Corps), farther south so as to seal the eastern exits of Valenciennes was apparently the most effective means for securing the fall of the city. The boundary between the XXII Corps east of the Escaut, and the Canadian Corps west of the river, formed by the flooded waters south of Valenciennes made more difficult the co operation of the powerful artillery of the Canadian Corps, with the advance on Valenciennes from the south. For an operation combining the rapid and effective action of artillery and infantry on both sides of the river a single command was extremely desirable.

This emphasises the danger of unfavourable waterways as the dividing line between the fronts or areas of formations. If bridges are down, lateral communication is cut off, the movement of reserves from one area to another may be much delayed and co-operation is endangered, each formation will be fully employed with its own front, and very careful supervision by the staff of higher formations is required to ensure adequate improvement of lateral communications and bridge building.

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Army Conference, 27th October.—The Army Commander therefore assembled a conference at army H. Q. at Auberchicourt; which was attended by a staff officer from the Third Army (Lt.-Col. Gepp), 27th October, and the following instructions were issued:—

The XXIInd and Canadian Corps, with the co-operation of the left corps (XVII) of the Third Army promised by Genl. Byng, would operate so as to force the enemy to evacuate Valenciennes. The operations to be carried out in three stages:—

1st stage (28th October).—The XXII Corps to secure Mont Houy, and as a general objective, a sunken road north of it which runs from Aulnoy to Poirier station. The Canadian Corps then immediately to relieve the XXII Corps of the front between the Rhonelle river and the Escaut at Poirier station.

(The new forward boundary between the XXII and Canadian Corps to be the Rhonelle river.)

2nd stage (30th October).—XXIInd and Canadian Corps to attack in co-operation with the left of the Third Army to secure the southern and eastern exits of Valenciennes.

3rd stage 1st November).—XXII and Canadian Corps to complete the envelopment of Valenciennes and the Canadian Corps to take every opportunity of supporting this attack by passing troops over the Escaut wherever a crossing could be effected on the west and north of Valenciennes.

28th October, Attack on Mont Houy by 51st Division.—At 5-15 a.m. on the 28th October the 51st Division (XXII Corps) delivered the attack, against the Mont Houy position, as directed. Strong opposition was encountered, but by noon the whole of Mont Houy had been captured, and the leading troops of the division were well down the front slope and holding Poirier station and the road east of it.

It was found impossible to hold the sunken road which had been given in army orders, as part of the objective for attack. This road is shown on the map as sunken for part of its length and provided with a bank on its northern side throughout its length. It was in reality level with the country to the north, and has a

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considerable bank on its southern side. While therefore affording good cover to infantry and machine guns defending it against attack from the south, it gave no protection, after its capture, to the infantry of the 51st Division from fire across the open plain to the north.

At 2.30 the enemy delivered a strong counter-attack, supported by heavy artillery fire. This attack forced back the centre of the 51st Division on to Mont Houy, and slightly down its southern slopes. The right of the Division fell back slightly, but the left still maintained its hold on a quarry at the south-west corner of Mont Houy wood and on Poirier station. The Division established itself in this position at the end of the day's fighting, having taken 150 prisoners.

Results of action of 28th October on relief of XXIInd Corps left by Canadian Corps.—It will be remembered that according to the instructions issued by the First Army the XXII Corps were to capture Mont Houy, and as a general objective the sunken road north of it and that following this operation the Canadian Corps were to relieve the XXII Corps on the front held by the 51st Division between the river Rhonelle and the Escaut; so as to be in a position to carry out a further stage of the operations on the 30th October.

The troops of the 4th Canadian Division were held in readiness to move forward for the relief at 4 P.M. But at that time, owing to the afternoon counter-attack made by the Germans, it was impossible to ascertain exactly the position held by the 51st Division.

It was certain that the sunken road was not in our possession, but it was not known if we retained possession of Mont Houy.

The G.O.C, 4th Canadian Division, was ready to carry out the relief; but the Corps Commander of the Canadian Corps proposed that the relief should be postponed, as the objectives assigned to the XXII Corps had not been gained. By night fall it was certain that we did not hold the Mont, and the relief was in consequence postponed. It was necessary therefore to amend the dates for the operations as a whole, and Army Orders were issued that the relief

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wo d be carried out on the following night (29th-30th October), the 2nd stage on the 31st in place of the 30th October and the 3rd stage on 2nd November in place of 1st.

The 24 hours postponement of the relief of the 51st Division by the 4th Canadian Division illustrates the danger of fixing objectives on the map, and the advisability of being guided by the man on the spot in such matters as to whether the tactical situation justifies the carrying out of reliefs, where complete possession of objectives has not been gained.

The Canadian Corps order had given the line of the road as the line on which relief was to take place, and although the exact situation was unknown at Corps of Army Headquarters, there was little doubt in the evening of the 28th that this exact line had not been secured. While therefore the Canadian Corps Commander was in a strong position, and the XXII Corps Commander, anxious to complete the relief of the tired division, was inclined to view the situation in the most favourable light; it is permissible to draw the lesson that (on the assumption that the two divisional generals were prepared to carry on with the relief), it would have been better to trust to the men on the spot in the matter, rather than to insist on a strict adherence to map objectives. Certainly 24 hours would have been saved.

29th October.—At 8 A.M. on the 29th October the enemy again counter-attacked under a barrage against the left of the 51st Division. The attack was repulsed with loss. But the enemy, determined to delay our advance on Valenciennes, again put down a heavy barrage at 4 o'clock, this time against the whole front from Famars to the Escaut. The German infantry were seen moving up to attack, but were engaged by field and heavy artillery from the east and west banks of the canal, and the attack did not materialize.

In the evening the 4th Canadian Division relieved the 51st Division.

G. H. Q. order.—On the same day the Army Commander's determination to force on the capture of Valenciennes was confirmed by the receipt of orders from G. H. Q. that the Fourth,

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Third and First Armies would be prepared to resume the offensive on or after 3rd November with a view to breaking the enemy's resistance south of the Condé canal and advancing in the general direction Avesnes, Maubeuge, Mons, the First French Army co-operating to the south.

The capture of Valenciennes, was therefore urgent, in order that the First Army might be in a position to secure the left flank of the great combined operation of four armies on a front of about 45 miles (Oise River to Turbies) contemplated by the C.-in-C.

29th October, First Army Orders.—The same night, orders were issued by the First Army that the operations against Valenciennes would be carried out by the XXII and Canadian Corps with the co-operation of the XVII Corps, Third Army, on the 1st November. Success was to be exploited, and troops passed across the canal by the Canadian Corps, wherever opportunity offered.

The failure of the 51st Division to hold the objectives given for the attack of 28th October and the cancellation of their relief that evening by 4th Canadian Division necessitated alterations in the dates of the subsequent operations, which had been fixed at the First Army Conference on the 27th October. Once the relief was postponed this was unavoidable, but the result is noteworthy. It meant changes in the orders of the Third Army for its XVII Corps and in the orders of formations within that Corps, and in the orders of the XXII and Canadian Corps, and of all their subordinate formations.

Then, again, on the night of the 29-30th October the receipt of G. H. Q. instructions for the next general operations on or after 3rd November the obvious signs of nervousness on the part of the enemy, and the desire to combine the stages of the operations against Valenciennes into one great forward movement, led to a further change from the original instructions. The three stages were to be combined into one operation on 1st November. In the result the orders of the Third Army, and of the XVII, and Canadian Corps, and all their subordinate formations were again upset.

It is easy to see how these changes came about, but such alterations produce lack of confidence in the higher com-

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mands, and a tendency to question the importance and urgency of all orders received. Doubtless, the Third Army said that the First Army never knew their own mind: and lower formations wondered why those above them could not settle what they wanted to do, and stick to it.

The lesson may be drawn for staff officers of higher formations that, while future plans and intentions of commanders should be thought out and studied, and subordinate commanders informed confidentially of what they should know; exact orders and dates for future operations, which are dependent on the success of initial tactical action, should not be issued prematurely: orders should not look too far ahead and all changes in them should be avoided. The great offensive movement contemplated by General Nivelle, as a result of initial tactical success in the operations of April 1917 which did not materialise will be in the recollections of students of that campaign on the Western front.

The battle of the 1st November.

Since the relief of the 51st Division by the 4th Canadian Division on the evening of 29th October, the operations between the Rhonelle and the Escaut had been in the hands of the Canadian Corps, and the map shows the distribution of our troops for the battle.

It is the study of the tactics of the Canadian Corps which forms the most interesting part of the attack which captured Valenciennes and opened the way for further advances on Mons.

For the attack on the Famars—Poirier station front (2,500—) only one infantry brigade (the 10th Canadian of the 4th Canadian Division) was to be employed and their attack was to pass over Mont Houy and the sunken road north of it and sweep on through the houses of Aulnoy (west of the Rhonelle) and across the open plain of La Targette, which had served as an aerodrome for the German plains, to the Valenciennes-Saultan railway, skirting the south of the town and the suburb of Marly; an advance of 3,700 yards. In the face of German guns, infantry and machine guns, entrenched, and determined, as we know to fight hard to prevent, or at least delay, the capture of Valenciennes, this was

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no mean task, and to render it possible the close co-operation of a powerful artillery was essential.

The remainder of the Canadian Corps lay on a 10 mile front as far north as opposite to Condé and unable to advance across the floods and canals on their front until a way through Valenciennes could be opened, the whole of the Corps Artillery which could be brought to bear on the front of attack was therefore organized in support of the attacking infantry.

8 Brigades of Field Artillery and

6 Brigades of Heavy Artillery were therefore available or a total of

144 18 prs. (under 20 yards of front per gun).
48 4·5 Howrs.
18 60 prs.
86 6" Howrs.
2 6" Guns.
5 8" Howrs.
303 Guns and Howitzers.

Their fire was distributed as follows:—

Field Artillery.—(18 prs.)

The area of attack (approximately 2,500 yds. by 3,700 yds. was divided into three barrage zones (right, left and centre) to be attacked by a shrapnel barrage of 18 prs., frontal, oblique and enfilade.

The right zone was barraged by the 39th Divisional Artillery (2 brigades).

The centre zone was barraged by the 4th Canadian Divisional Artillery (2 brigades) of which one brigade was detailed for close support of the infantry, in case of exploitation, and was ordered to be prepared to provide anti-tank defence.

The left zone was barraged by the 2nd Canadian Divisional Artillery (2 brigades).

The 5th Canadian Divisional Artillery (2 brigades) in position about La Sentinelle on the left flank of the attack, were to deliver an enfilade barrage 500 yards ahead of the rolling barrage.

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The barrage moved forward at 100 yards in 4 minutes up to the first objective (the sunken road) then at 100 yards. in 5 minutes up to 200 yards beyond the objective, and then halted zero plus 190 for a quarter of an hour when it ceased, to allow exploitation.

The tasks for the 4·5 Howrs. were as follows:—

3 batteries west of the Escaut were detailed for smoke screens, starting about 1,000 yards behind the enemy's front line, and jumping back in bounds of about 800 yards as our infantry approached.

5 batteries east of the Escaut were to bombard organised shell holes, trenches, machine gun nests and buildings in the three zones of the 18 pr. barrage; and to lift when the rolling barrage came within 300 yards.

The six brigades of Heavy Artillery were so sited as to be able to bring enfilade and reverse fire on the area to be captured, one brigade being well forward and to remain silent during the early stages of the attack.

3½ brigades were employed for counter-battery work, neutralising fire on hostile batteries, concentrations on suspected assembly areas, and harassing fire on approaches. The remainder—11 batteries of 6″ Howrs. formed bombardment batteries, carrying out intensive fire on all groups of houses suspected of containing machine guns, and a creeping barrage along the houses in the Escaut and Rhonelle valleys.

The allotment of artillery was therefore a very dense one for the operation in hand, and resulted in a demolition of buildings and a production of smoke; dust and flying bricks and debris of such a nature as completely to demoralise the enemy, who hid themselves in cellars, and surrendered fairly easily on the arrival of the infantry.

There was no preliminary bombardment, and the opening of rapid and intensive fire at zero by all the artillery referred to above in the confined area of attack was the sudden commencement for the Germans of an ordeal which few troops can ever have been called on to face.

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Machine Guns.—The Canadian Corps, pioneers in the higher organisation of machine gun commands, had at their disposal, in addition to the divisional machine gun battalions, a motor machine gun brigade of 5 batteries, and these, as well as 3 armoured cars were placed at the disposal of the 4th Canadian Division.

32 guns and an armoured car were allotted to the 10th (attacking) Infantry brigade; 72 guns were employed on barrage work, and the remaining 32 guns of the Division were with their Infantry brigades (11th and 12th) on the west of the Escaut.

R. F. A.—Contact planes were to fly at 6, 8, 11 and 2 o'clock, and after as required, low flying planes were to assist the attack by bombing and machine-gunning the enemy.

Attack on 1st November.—The infantry attack was delivered at 5-15 A.M. on the 1st November on the front from Sepmeries to the Escaut by the—

61st Division, XVII Corps, Third Army.

4th and 49th Divisions, XXII Corps.

10th Infantry brigade.—4th Canadian Division. Canadian Corps, from right to left.

Attack of 61st and 4th Divisions.—The 61st, 4th and 49th Divisions forced the passage of the Rhonelle river without great difficulty, and gained the high ground south and west of Preseau. The 4th Division forced its way into Preseau, but at 9-30 A.M. the Germans counter-attacked, and drove it back to the western edge of the village, where it established itself in touch with the 61st Division, which had taken Maresches and established itself on the high ground north of the village. The enemy fought hard and no further advance was made on this flank during the day.

Attack of 49th Division.—On the left of the 4th Division, the 49th Division secured Aulnoy, and gained the western edge of the spur running from Preseau to that village. Then, in face of heavy artillery and machine gun fire across the open ground, the division pressed on and reached the Preseau-Marly Steel Works road. Beyond this it was unable to advance, in face of the stub-

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born resistance of the Germans, holding the sunken road from Preseau to Saltain, and the enclosures on the west of the latter village. About 12 noon the right flank of the division was heavily counter-attacked by the enemy's infantry, supported by 5 tanks, and the division fell back some 1,000 yards to the line of the Preseau-Aulnoy road. The left flank of the division maintained touch with the right of the Canadian Corps on the railway just south of Marly Steel Works.

Attack of the 10th Canadian Infantry brigade.—The 10th Canadian Infantry brigade attacked with the 44th Battalion on the right; 47th Battalion on the left. The 46th Battalion leap-frogged the 44th after passing Aulnoy; the 47th went through to the final objective. The 50th Battalion was in reserve.

The attack made excellent progress. By 06-30 Mont Houy was completely in our hands, and the sunken road was secured throughout. At 07-00 Aulnoy had been secured and cleared, and the bridge over the Rhonelle had been captured intact.

Prisoners soon began to come in, and the enormous number of enemy dead testified to the strength and accuracy of the artillery co-operation with the infantry attack. At first the hostile artillery fire was heavy, and the defence barrage came down promptly: but decreased as the attack proceeded, under the fire of our counter-batteries.

At 08-50 our troops had reached the southern outskirts of the town and were meeting with some opposition from the Morly Steel Works. The morning had broken bright, sunny and clear, and this favoured direct observation of the attack, both from the flank, on the west side of the Canal de l'Escaut, and from the rear.

At 10-10 Brigade Headquarters had received reports from both the 46th and 47th battalions that they were on the final line and were consolidating against counter-attack.

The Brigade employed less than 1,500 men in the operation. The total casualties were 500 of which 60 were killed and 61 missing. The fighting had been severe, the Canadian Infantry, enraged by reports of German atrocities in Denain and other

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villages, gave little quarter. During the day 1,450 wounded and unwounded prisoners were taken by the Brigade, identifying no less than 19 battalions from five different divisions besides two marksman machine gun detachments. Over 800 dead were buried in the 10th Canadian Infantry Brigade area alone.

Between noon 31st October and noon 2nd November the artillery of the Canadian Corps expended 87,774 rounds of all natures.

The 10th Brigade was relieved in the evening by the 11th Canadian Infantry Brigade.

ACTION OF 12TH CANADIAN INFANTRY BRIGADE.

As soon as the success of the attack of the 10th Canadian Infantry Brigade was assured, the 12th Canadian Infantry Brigade which was holding the west bank of the Escaut passed three companies of the 38th Battalion across the river on the southern edge of the town and a platoon of the 72nd Battalion further north, just south of Valenciennes station.

The 38th Battalion established touch with the 10th Brigade on their right, and the 72nd Battalion with the 4th Canadian Mounted Rifles on the railway Brigade on their left.

Later the 38th Battalion established themselves along the railway on the west edge of the town.

The 72nd Battalion encountered heavy fighting in the railway yards, and considerable opposition was met from the houses of Valenciennes, and no advance east of the railway on the west of the town was possible before dark. At nightfall patrols of the 38th and 72nd Battalions began to push into the town.

Result of the operation of 1st November.—The day's fighting had been a striking success and gave promise of the early occupation of Valenciennes. The line formed by the XXII and Canadian Corps at nightfall is shown on the Map. The two Corps had captured 2,750 prisoners during the day, almost equally divided between the two.

The German dispositions showed 51 battalions of 6 divisions in and around Valenciennes.

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Army Order for 2nd November.—In the evening, Army Orders were issued for the XXII Corps to attack the following morning to secure Preseau, the Preseau-Marly road, and the Marly Steel Works, which had held up the 49th Division. The Canadian Corps was to exploit eastwards through Valenciennes and capture Marly. Both corps to exploit, as already ordered towards the general line Ferme de Wult (excl.)-Saultain-St. Saulve.

In defining the objectives and boundaries of the XXII and Canadian Corps for the 1st November it was an undoubted error on the part of the Army Staff not to have included the Marly Steel Works in the objectives for the day. Just at the Steel Works the Rhonelle river (the boundary between the two corps), swings left handed (as you face Valenciennes). The Steel Works therefore came into the sphere of the 49th Division (XXII Corps) but they were not included in the objective for the day. It should have been clear from the map that these works might very probably form a strong point for the enemy, denying the actual capture of the exits from Valenciennes and, from their position at the boundary of the two corps, would delay the infantry of the 49th Division while their destruction by the guns of the XXII Corps would be difficult, although they could easily be knocked out by the heavy artillery of the Canadian Corps from west of the Escaut.

In the event, the works resisted the attack of the 49th Division the necessary arrangements for assistance by the Canadian Corps guns were not made, although they were ready to give it: and the Steel Works remained in the hands of the enemy till the following morning.

Operations of 2nd November.—Before daylight on the 2nd November the 49th Division had fought its way on to the Preseau-Marly road and the 146th Brigade had captured the Marly Steel Works which were found empty.

The 54th Battalion of the 11th Canadian Infantry Brigade which had relieved the 10th Brigade during the night, were to have attacked Marly under a barrage at 5.30 A.M. but their patrols made progress in the night; and cancelling the barrage, they

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fought their way into the village—occupied by some infantry and machine guns, and soon after daylight joined hands with the 38th and 72nd Battalions of the 12th Brigade which had pushed through Valenciennes during the night. By 8-15 A.M. they were established on the eastern outskirts of the town and had pushed out patrols to the east.

About 5,000 Civilians were found in Valenciennes and some 2,000 odd in Marly.

At dawn the 4th Division attacked in co-operation with the 61st. The 4th Division, after a brisk fight, captured Preseau, and pushed on to the high ground to the east, capturing five field guns and two abandoned tanks. The 61st Division captured the high ground at Ferme de Wult.

On this flank fighting continued to be heavy, the enemy being obviously determined to delay the encircling of Valenciennes. The 4th and 49th Division made no further progress, but captured some 1,000 prisoners during the day. These showed that the enemy had hurried up three more divisions in their attempt to stop our advance. By the evening no less than 42 Battalions from eight different German divisions had been identified in front of the three attacking divisions (4th, 49th, and 4th Canadian) since the morning of the 1st November.

Further north, however, the advance continued. There were signs of withdrawal by the enemy north of Valenciennes on the front of the 4th Canadian Division, resistance was slackening, and by the evening this Division had captured St. Saulve and had patrols some 4 to 5 miles east of Valenciennes. Further north again the German infantry were still holding the line of Jard and Escaut canals: but their artillery activity had considerably decreased.

Result of the operations of 1st & 2nd November.—As a result of the operations of the two days therefore Valenciennes had been secured: the passage across the Escaut through the town were in our possession, and the First Army was in a position to secure the left flank of the operations of the First French, Fourth and Third Armies in the advance on La Capalle Avesnes-Maubeauge-Mons.

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The German dispositions on 2nd November show no less than 14 Divisions east and south of Valenciennes.

G. H. Q. orders received on the 2nd November confirmed the 4th November as the date for the combined general attack, and orders for the operations were issued by First Army the same afternoon; the objectives generally being —

XVII Corps, Third Army } East of Jenlain.

XXII Corps—east of Curgies.

Canadian Corps—east of Estreux.

VIII Corps—to detect and follow any retirement of the enemy along the Jard canal.

All corps were to be prepared to continue operations on the 5th and following days.

But the results of the fighting of the 1st and 2nd November had not been exhausted, and the objectives of the XXII and Canadian Corps for the 4th November fell into their hands on the 3rd. As soon as it was daylight, patrols along the whole front of the two Corps found that they were opposed only by weak rearguards. The advance was resumed without delay, and by mid-day the XXII Corps and the Canadian Corps (4th Canadian Division) had occupied Saultain and Estreux respectively. During the afternoon the advanced guards brushed aside slight opposition, and by nightfall the 11th and 56th Divisions of the XXII Corps (which had relieved the 4th and 49th Divisions) were holding the high ground east of Curgies, and the right of the 11th Division was in touch with the XVII Corps (61st Division) which had captured Jenlain.

At nightfall the First Army outposts were on the high ground a mile east of Curgies. North of Valenciennes the 3rd Canadian Division had pushed patrols across the Escaut and commenced to bridge the canal at three places. North of Condé there was still no sign of withdrawal.

The retirement continued on the 4th November but the operations now developed into the phase leading to the capture

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of Mons and the armistice ; and the operations centering round Valenciennes may be considered as concluded.

Certain observations have been made during the course of the narrative, but in addition the following appear to call for comment :—

1. Instructions issued by the First Army after the conference of the 27th October.—The inability of the 51st Division exhausted by heavy fighting to retain the whole of its objectives on the 28th October, and the striking success of the attack on 1st November, when the 4th Canadian Division were able to sweep over Mont Houy, and carry on the advance to the outskirts of Valenciennes; make rather obvious three criticisms :—

(i) That the 51st Division should not have been committed to an isolated attack for the capture of an exposed tactical point, which must be the focus of concentrated hostile artillery fire, if not off counter-attacks.

(ii) That such tactical points are easier taken, especially when near the jumping off line, in the stride of a large co-ordinated attack, under a heavy barrage.

(iii) That as the object of the relief of the 51st Division by the Canadian Corps was to obtain full benefit of the co operation of the Corps artillery of the latter from the west bank of the Escaut, the relief should have preceded the attack on Mont Houy and not have been designed to follow it.

There is ample justification for all these criticisms, and no one is better aware of the truths contained in them than Lord Horne. But true as they are, they illustrate some of the dangers of criticism, in the fuller knowledge of later events. At the time of the conference on the afternoon of the 27th October arrangements had already been made by the XXII Corps for further advance on the 28th, and by the 51st Division of that Corps for the capture of Mont Houy, which was to form their part of the day's fighting. No undue difficulty was anticipated in the capture of Mont Houy, on the 28th greater resistance than actually was offered was expected in the final advance on the town.

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2. Initiative of subordinate commanders.—The value of initiative on the part of subordinate commanders in carrying out the spirit, and not only the letter, of the orders under which they are acting, has been so much insisted on, and is so generally understood that only two instances need be cited as good examples—

(i) On the morning of 2nd November the 54th Battalion, 11th Canadian Infantry Brigade were to attack Marly under a barrage at 5-30 A.M., but finding the situation altered, their C. O. countermanded the barrage, and went on without it.

(i) On the 3rd November preparations were to be made for general advance on the front of the XXII and Canadian Corps on the 4th November. But brigade and battalion commanders, learning from their patrols that the enemy was again withdrawing, pushed on and made ground without waiting for formal orders. They saw that it was not now a time for waiting for a set-piece attack, independent advance by brigade and battalions was not only possible, but was called for by the situation. Conditions were merging into those of open warfare the pursuit of a retreating enemy—advanced guard action against rear guards; and the brigade and battalion commanders were worthy of the responsibility which rests on the leaders of front line troops.

If subordinate leaders are trusted, and their initiative meets with sympathy and backing, we shall get in war the spontaneous offensive action which characterised the work of the troops during the last days of the war. We must be on our guard against the attempt to lay down hard and fast orders for all situations and all subordinate formations.

3. Co-ordination of plans and co-operation in action. This paper has been styled a "Study in co operation" and it is hoped that the reason for this title has been made clear from the narrative. But attention may be drawn to the main features of co-ordination and co-operation which were such prominent factors in the success of the operations.

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1. *Co-operation between Armies.*—The intimate co-operation of the Commander of the Third Army with the First Army. Without reference to G. H. Q., Lord Byng sent a staff officer to the First Army conference at Auberchicourt, on 27th October and offered co operation in the fighting for Valenciennes.

The actions of the XVII Corps on the 1st and 2nd November completed the movement round the east of the town, which threatened the retreat of the Germans, and combined with the attacks of the First Army, drove the enemy out of the city.

2. *Co-operation between Corps.*—The co-operation between the XVII and XXII and Canadian Corps on the 1st and 2nd November.

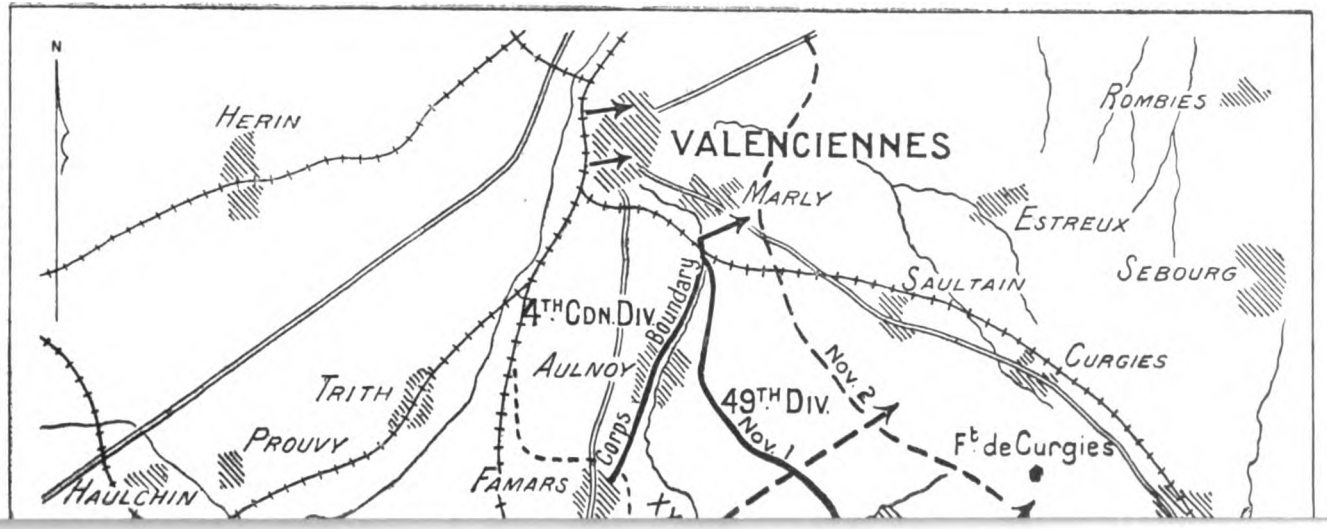
3 *Co-operation within the Corps. Artillery and Infantry.*—The striking unity of effort between the artillery and infantry of the Canadian Corps, in the battle of November 1st.

4. *Co-operation between brigades and battalions within the Division.*—Complete co-ordination and co-operation between the 10th Canadian Infantry Brigade and the 38th and 72nd battalions of the 12th Canadian Infantry Brigade in the movement on the town of Valenciennes on 1st November and of the 12th Canadian Infantry Brigade and the 54th battalion of the 11th Canadian Infantry Brigade in working through the town in the early morning of the 2nd November.

5. *Co-operation between Divisions within the Corps.*—The close co operation between the 3rd and 4th Canadian Divisions in the advance east of the town on 3rd November. Here we can emphasise the cohesion, confidence, and added fighting value of divisions in major operations belonging to a permanent corps like the Canadian and Australian Corps and not moving from Corps to Corps as had to be done in the case of the divisions from home.

6. *Co-operation between branches of the Staff and Royal Engineers.*—Two of the great difficulties to be overcome during the advance of the First Army in October and November in the operations round Valenciennes were the repair of broken communications and the maintenance of the fighting troops. These were accentuated by the number of canals, rivers, and railways

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N
HERIN
VALENCIENNES
ROMBIES
MARLY
ESTREUX
SAULTAIN
SEBOURG
4TH CDN. DIV.
AULNOY
BOUNDARY
CORPS
CURGIES
TRITH
PROUVY
49TH DIV.
NOV. 2
NOV. 1
Ft de CURGIES
HAULCHIN
FAMARS

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in the industrial and agricultural area through which we were operating and required the close co-operation between "G" and "Q," and the R. E.

The Army Chief Engineer's map of the first week in November shows no fewer than 161 bridges repaired, constructed, or under construction in the Army area at the time while the Q. M. G.'s Branch of the staff was required to provide food for some thousands of French civilians in addition to supplying the needs of the troops in munitions, stores and supplies over roads torn up by a retreating enemy.

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NOTES ON STUDY FOR THE STAFF COLLEGE EXAMINATION.

By Colonel-Commandant A. E. McNamara, C.M.G., D.S.O.

The following notes are intended primarily to assist officers working for the Staff College examination. It is hoped, however, that they may be also of service to officers studying for promotion examinations.

PART I.

GENERAL.

1. The general principles upon which the syllabus for the Staff College examination is framed are given in the remarks on pages 3—5 of the Report on the 1921 examination.

2. (*a*) The syllabus is framed to ensure that candidates have a wide military and general knowledge. This entails steady reading over a wide field, and the habit of thinking "big," and thinking deeply. The days of relying on cramming up a mass of detail during a few months prior to the examination are no more. (*Vide* T. & M. Regulations 1923, Sec. 8.)

(*b*) Prospective candidates should, therefore, early in their career commence to develop their interest in all questions of Imperial and Military importance. This can best be achieved by:—

(*i*) Reading parliamentary debates and newspaper articles on such imperial and military questions.

(*ii*) Studying periodicals such as the Army Quarterly, Journals of the R. U. S. I. and the U. S. I. India, the Round Table, etc.

(*iii*) Reading any books which deal with the future, either from a military, mechanical or social point of view.

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(*iv*) Cultivating a habit of thinking out all that is gleaned at lectures, conferences, during attachment to the staff, at courses, during intercourse with officers from the Staff College and of other arms, etc.

(*v*) Finally by being alive, observant, and always ready to learn.

3. The reports on all Staff College and Promotion examinations held since the war are invaluable. The recent report on the 1924 examination should be considered carefully.

4. In studying lessons of the past, officers must bear in mind that the only object in doing so is to look ahead and to foresee the requirements of the future.

Developments in modern inventions, and improvements and alterations in armament must result in the battle of the future assuming a shape different from that of 1914—18.

Just as the war of 1914—18 entailed methods of applying principles different from those of the South African or Russo-Japanese wars, so will our next war involve further modifications in the methods of the past.

Officers must not, therefore, content themselves with accepting the methods of 1914—18, but must ever be thinking out how modern inventions will entail modifications in our methods and organisation (*Vide* T. & M. Regs. 1923, Sec. 1 (6) & (7).)

5. In the following notes various books are mentioned.

Officers responsible for Officers' libraries will do much to facilitate study if they will ensure that libraries are stocked with the right type of book, as far as financial conditions permit.

6. These notes deal only with the obligatory subjects. Intending candidates for the Staff College should select their optional subjects early and commence to study them at once. It is unwise to leave optional subjects (especially languages) until within a short time of the examination.

Much useful information on this, and other subjects dealing with the Staff College examination, is given in "Notes on working

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for the examination for admission to the Staff College," by Major Wakeley, M.C., R.E.*

As regards "Movements"—attention is drawn to the recent official manual on this subject.

* EDITOR'S NOTE.—Published in the Journal for January 1923, and since issued in pamphlet form by Messrs. Sifton, Præd, 67, St. James' St., London, S. W. See also article on the same subject by Captain R. G. Williams in Journal for January 1924.

PART II.

TRAINING FOR WAR.

7. *Syllabus.*—The syllabus entails ability on the part of the candidate—

(*a*) To write a concise and logically argued paper discussing any principles of war laid down in F. S. R. and the training manuals, or any subject of current interest affecting the application of these principles. (*Vide* paras. 8 and 9.)

(*b*) To apply the principles of F. S. R. and the manuals in the solution of tactical problems. (*Vide* paras. 10—15).

(*c*) To discuss how these principles were applied in war by commanders in the past, and to consider how modern inventions will modify their application in the future. (Para. 16.)

(*d*) To apply knowledge of principles to the training of troops for war. (Para. 17.)

These requirements are dealt with below.

8. *Ability to write concisely.*—

(*a*) The reports on nearly all examinations comment on the inability of officers to write concisely, logically and to the point.

Failure to write logically is usually the result of failing to think logically. Practice is the only cure.

(Page 3, Report S. C. examination, 1924.)

(*b*) Write short papers on any subject of military or national interest and get some qualified officer to criticise. Write against time.—Limit yourself to a stated period in which to complete the paper and do

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not exceed it. Gradually curtail the time you allow yourself, until you are well within the time allowed for similar papers in the examination. Remember that time in the Staff College examination (and in war) is a vital factor. You must be able to fasten on to essentials, disregard non-essentials, and in a given time to produce a more concise and logically argued paper than your fellow competitor.

Hence again practise against time.

(*c*) Try to accustom yourself to marshalling your ideas in logical sequence. It should be the exception to state a fact without making from it some deduction which affects the subject under discussion.

(*d*) Number your paragraphs and let each deal with only one idea.

(*e*) Short sentences— Keep to the point – Avoid superlatives, slang and catch phrases, and do not write for effect. (Page 3, Report S. C. examination, 1924). (T. & M. Regs. 1923, Sec. 13.)

9. *Principles.*—The first thing to do is to learn the "rules of the game." You clearly cannot apply the principles of war either in the field, on a map, or in reading Military History, unless you know what these principles are.

Therefore,

(*a*) Learn F. S. R. from A to Z.

(*b*) Study the tactical portions (including characteristics, general organisation and armament) of the manuals of the different arms.

(*c*) Read reports on C.I.G.S.'s Staff Exercises, Training Instructions issued by W. O. and A. H. Q., India.

Read A. H. Q. India Memorandum No. 16208, I. (M. T. 1) of 22nd November 1923 ref. co-operation between R. A. F. and other arms.

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Study all official papers issued by higher formations on training for war.

(*d*) Don't learn above by heart, but read with the sole purpose of grasping and applying the principles laid down. Practise applying in schemes the principles you have read. Remember that no two situations in war are ever exactly alike. Principles apply to all situations, but the method of giving effect to them will vary in every case. This can only be acquired by knowledge and practice.

(*e*) Amplify the knowledge acquired in the above official publications by reading some books such as:—

"Direction of War" ...Bird.
"Principles of War" ...Foch.
"Science of War" ...Henderson.

10. *Tactical Problems.*—There are five essentials to be mastered before you can hope to solve with credit a tactical problem, *viz.*:—

(*a*) Ability to read a map, quickly and accurately. (Para. 11.)

(*b*) An intimate knowledge of the general (not detailed) organisation, armament, characteristics and tactical employment of each arm. (Para. 12.)

(*c*) A thorough knowledge of the application of the principles governing the combined action of all arms. (Para 12.)

(*d*) Ability to argue out shortly the "pros" and "cons" of a given situation so as to arrive logically at a sound and firm plan of action (*viz.*, Appreciation). (Para. 13.

(*e*) Ability to write clear orders or instructions to give effect to your plan. (Para. 14.)

11. *Map Reading.*—

Every one thinks he can read a map.

Few can do so rapidly and with facility.

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Efficiency in this subject entails the capability of perceiving at a glance, and in moments of intense hurry the shape of the ground, and of appreciating its tactical possibilities.

Practice is the only remedy.

Study Manual of "Map Reading and Field Sketching."

12. *Principles, characteristics and armament of each arm.*—(*Vide* para. 9.)

13. *Appreciation.*—

(*a*) (*Vide* para. 8.)

Read T. & M. Regs., 1923., Sec. 25.

Read Pages 5 and 6 of Report S. C. examination, 1924.

(*b*) Be perfectly clear as to what is meant by "Appreciating a Situation."

In every problem in life, whether it be the plan of attack of an army, or the purchase of a polo pony, you have to think out the arguments for and against each course of action open to you, and come to a quick and definite decision based on your knowledge of your opponent's methods and the rules of the game.

This is an appreciation.

(*c*) An appreciation is then the solving of a concrete problem. It is obvious that you cannot solve this problem unless you know what the problem is.

Yet in many appreciations it is perfectly apparent that the writer has only a blurred idea of what the problem really is. (*Vide* page 7, III, Report S. C. examination, 1924.)

Hence irrelevance, waste of precious time, waste of effort and disappointing results.

The first essential therefore is to read the problem very carefully, and to make sure you grasp it before you attempt the solution.

Say to yourself "What is the problem?"

If you answer this question correctly you will be half way on the road to a sound solution.

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(*d*) Remember that in war, peace training, and examinations time is a vital factor, and rapidity is reasoning and coming to a decision is all important.

Hence it is impossible to deal with any but the dominant factors of the situation. There is no time for non-essentials.

Only those arguments should be included in an appreciation which directly influence your final decision, and the manner in which they do affect it should be clearly brought out.

Arguments must hang together and lead somewhere otherwise they are a waste of time.

It is quite impossible in the time available in the Staff College examination to copy out the greater part of the narrative. A few rough notes as to the situation will serve equally well to clear the writer's mind, will save time, and the appreciation will thus come straight to essentials.

(*e*) These essentials are:—

(*i*) A clear statement of the object to be achieved.

(*ii*) A logical and concise train of reasoning, leading direct to a definite and firm decision as to the general course of action to be adopted.

(*iii*) A detailed plan showing how effect is to be given to the decision arrived at in (*ii*) above.

(*f*) The plan of action must be given in sufficient detail to enable your staff to issue orders to give effect to it.

Hence, every unit in your force must be dealt with. Remember that an appreciation *minus* a clear and definite plan is useless.

14. *Orders.*—

(*a*) Read F. S. R., Vol. II, Chap. VI and Vol. I, Chap. XIII and pages 58, 59, 62 and 63 of Report on W. O. Staff Exercise of April 1923.

Page 6, Report on S. C. examination, 1924.

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(*b*) Practise writing orders and get a qualified officer to criticise.

Write against time.

(*Vide* para. 8.)

Be prepared to adopt the telegraphic form of orders whenever the situation demands it.

15. *General.*—The one and only way to become proficient in the solution of tactical problems is by practice. (*Vide* T. and M. Regs., 1923, Sec. 15 (1).)

Work out schemes, get a senior officer to criticise your appreciation and orders.

Again—Work against time.

MILITARY HISTORY. (*Vide* para. 7 (*c*).)

16. (*a*) *Objects of reading Military History.* (*Vide* T. & M. Regs, 1923, Sec. 9.)—The first thing to be clear about is the end in view when reading Military History.

The object is to examine how commanders in the past applied the principles of war, how the application of these principles has gradually been modified in accordance with the developments of modern inventions, and, finally (and most important of all), to consider what further modifications will be required in the future to keep pace with the discoveries of science, and the possibilities of new inventions.

(*b*) ***Method of Study.***—Read Chapter VII of Henderson's Science of War, the examiners remarks on question 2 of 3rd paper, Training for War, in the Staff College examination, February 1921, and page 5 of Report on 1924 examination. These give a clear indication of how to approach the subject.

The first difficulty of the beginner, is how to make a start. Should he read Hamley, Clausewitz, the Napoleonic wars, etc., or concentrate on the war of 1914—18?

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This much depends on the individual, and on the scope of his previous reading, but the following suggestion is made as a basis for the novice :—

(*i*) Study the rules of the game as indicated in para. 9.

(*ii*) Think out the object and method of reading Military History as indicated above. You must realise that your purpose is to read in the light of your knowledge of principles, to think out how each operation you study was, or was not, conducted in accordance with these principles, the causes of success or failure, the information available to the commander at the time, and finally to consider how modern developments would now entail modification of the methods adopted.

Ponder all this out and evolve a method of study before you commence.

(*iii*) Having cleared your mind as to how you are going to read, the next question is what to read. The 1914—18 campaign is clearly the most important. As a framework, take one phase in each theatre of war, *viz* :—

Western Front,

Dardanelles,

Mesopotamia,

Palestine.

Select one of these phases to concentrate on first. As regards the Western front 1914 and 1918 are probably the most instructive.

When you have completed the study of a phase in one theatre, then pass on to the period you have selected in another theatre.

Concurrently with above read, say :—

"Direction of War" ... Bird,

or

"Principles of War" ... Foch.

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In each phase of Military History which you read, mark down the lessons and principles involved, and refer back to the precepts in our manuals At the end of each sitting say to yourself—

What have I learnt?

What principles are involved?

What was the cause of success or failure?

What principle of F.S.R. was fulfilled or neglected?

How would the application of the teaching of Bird or Foch have influenced the results of the operation?

Thus will you ensure the greatest value from your studies.

(*iv*) Having studied on the above lines one phase in each theatre in 1914—18, if there is yet time before the examination, enlarge your scope by reading one phase of some of the more important campaigns in the past. Think out how progress in organisation and armament have altered the application of principles since the days of Napoleon, Lee and Moltke.

Important campaigns are:—

Napoleon, 1796
Jena
Ulm
} Hamley deals with each of these.

Stonewall Jackson.

1870

Russo-Japanese War.

(*c*) *Books.*

(*i*) *Western Front.*—Official History, 1914.

Official Despatches.

Forty Days in 1914
Last Four months
} Maurice.

Story of the Fourth Army, Montgomery.

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German Strategy in the Great War. } Neame.

My War Memories, Ludendorff.

General Headquarters, Falkenhayn.

March on Paris and Battle of the Marne. } Von Kluck.

(*ii*) *Palestine.*—Advance of Egyptian Exp. Force. } Official.

How Jerusalem was won Allenby's Final Triumph } Massy.

A brief record of the Advance of the Egyptian Exp. Force, July 1917—Oct. 1918. } Official.

Outline of the Egyptian and Palestine Campaigns, 1914 to 1918. } Bowman Manifold.

(*iii*) *Dardanelles.*—Callwell.

Official Despatches.

(*iv*) *Mesopotamia.*—Chapter of Misfortunes, Bird.
Official History, Moberly.

(*v*) *Napoleon.*—Hamley.

(*vi*) *American Civil War.*—Stonewall Jackson (Henderson), Ropes.

(*vii*) *1870.*—Lehancourt.
Hamley.

N.B.—Army Quarterly & R.U.S.I. & U.S.I., India Journals contain valuable articles on all these campaigns.

17. *Training of Troops.*—

(*a*) Read the instructions and reports on training issued by War Office, A.H.Q, India, and higher formation.

(*b*) Read lectures and papers by Sir Ivor Maxse, Col. Fuller and other authorities.

(*c*) Read T. & M. Regs., 1923, and portions of manuals dealing with training (including "Notes on Elementary Tactical Training" and "Section leading in attack and defence").

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(*d*) Notes on Infantry Tactics and Training by Lieut.-Gen. Sir G. M. Harper.

(*e*) Make notes after all conferences you attend and mark down your own conclusions. In this connection, in all you read and hear, weigh the opinions of others, but make up your own mind.

(*f*) Consider methods of training troops in war when out of the fighting line. Our experiences in 1914—18 are the best guide.

(*g*) Be prepared to discuss recent training inceptions such as the training cadre—new weapon training courses, Umpiring methods, etc.

PART III.

ORGANISATION AND ADMINISTRATION.

18. *Syllabus.*—Read examiner's remarks on the February 1921 Staff College examination and page 7 of 1924 report.

19. *Establishments.*—Study peace and war establishments.

20. *Organisation and Administration in war.*—

Study F. S. R., Vol. I.

Sections VIII and IX of report on W. O. Staff.

Exercise, April 1923.

Study Mob. Regs.—Discuss with your Quartermaster.

Read "Military Organisation and Administration," Major Lindsell.

Be capable of applying the principles therein laid down in schemes.

This capacity can only be acquired by practice.

21. *Organisation and Administration in peace.*—

(*a*) Know the general peace organisation of the United Kingdom (including general functions of Depôt).

(*b*) Study our system of drafting abroad and the organisation of the Army reserve. (K. R.) Note the time of year the

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majority of recruits flow in and how this affects drafting and training. Have some views on the Cardwell system.

(*c*) Study the organisation and purpose of the Territorial Force and Militia.

(*d*) Army List, Statesman's Year Book, Territorial Force Regulations and Military Organisation and Administration by Major Lindsell, and practical experience cover most of the subject.

22. *Organisation of our Army since* 1868.—

"Outline of the development of the British Army up to 1914," by Major-General Sir Hastings Anderson.

23. *Forces of the Empire.*—

Army List. Statesman's Year Book.

Daily Mail Year Book, etc.

Parliamentary Debates and newspaper articles.

N.B.—The General Staff of higher formations can sometimes assist candidates with publications on the organisation of Colonial Forces.

24. *General Knowledge on Organisation.*—Be prepared to discuss general questions of organisation of current interest such as—

(*a*) Broad principles affecting the strength and organisation of the forces of the Empire.

(*b*) Questions of alterations in organisation to meet modern developments.—

Mechanicalisation of guns and transport, Tanks Air Power to replace land forces in garrisoning outskirts of the Empire, etc.

Pack Artillery, Anti-Tank Guns, etc.

(*c*) Such subjects as four *versus* six gun batteries—3 or 4 battalions per Infantry Brigade, Divisional or Corps Cavalry.

Infantry close-defence guns, etc.

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Number of the automatic weapons in an Infantry Battalion.

25. The capacity to think out and discuss these questions is best acquired by :—

(*a*) Reading articles in newspapers and periodicals. Here again give the views of the author full weight, but form your own conclusions.

(*b*) Read Colonel Fuller's writings.

Follow the reviews of his works, and the counter arguments which his visions of the future sometimes invoke. (*Vide* "Reformation of War", by Colonel Fuller).

(*c*) Keep in touch if possible with officers serving at Staff College, or Senior Officers' School, with mechanicalised artillery, or where progressive ideas are likely to prevail.

(*d*) Study the why and wherefore of any administrative innovation or alteration since the war, *viz.*, cost accounting ; recruiting organisation ; organisation of artillery depôt; re-organisation of infantry depôts ; the headquarter wing; anti-aircraft defence, etc.

(*e*) Follow parliamentary debates on questions of army organisation.

26. *Law.*—

(*a*) Know your way about the Manual of Military Law and King's Regulations.

Make sure your books are up to date.

(*b*) Quote Sections of Army Act and Rules of Procedure and not the introductory chapters of the Manual of Military Law.

(*c*) Read "Hints on Courts Martial" issued from time to time by higher aformations. Ask your Adjutant for them if you have not been issued with them.

(*d*) Be mindful of duties in aid of Civil Power.

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PART IV.

IMPERIAL ORGANISATION.

27. The examiner's remarks on this subject in the report of the 1921 examination are a clear indication to officers of the direction their studies should take.

28. The following method of approaching the subject is suggested :—

(*a*) Get a good atlas and study what the British Empire really is, how it all hangs together, and the strategic aspects of its frontiers with regard to other countries.

(*b*) Next read some good books on Military Geography.

This will put you on the road to appreciating the strategic requirements of various portions of the Empire.

Read thoughtfully with a view to forming your own conclusions and applying your knowledge to the consideration of specific problems. (Read examiner's remarks in report on 1924 Examination.)

The following books are suggested :—

Elementary Imperial Military Geography Cole . (Sifton, Præd, 1924).

Naval and Military Geography of The British Empire. } Vaughan Cornish.
A Geography of Imperial Defence }

Imperial Military Geography...Fitzgerald Lee.

(*c*) Next take each important portion of the British Empire and refer to the best books available as to details of its history, Government and strategic importance.

The following are some books to refer to:—

Those given under (*b*) above.

" Government of the British Empire "...Jenks.

" The British Empire" ... ...Lucas.

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"Foundation and Growth of the British Empire." } Williamson.

"Influence of Sea Power" ... Mahan.

(*d*) Follow articles in the press, periodicals and parliamentary debates on prominent questions of strategical, geographical or historical importance connected with the Empire. Look up details as regards the regions in question in the books indicated above. Likewise study the Imperial importance of questions much in the lime-light, *viz.*, Pacific, Singapore base, Mesopotamia, Afghanistan, etc. It is useful to keep newspaper cuttings, indexed in a scrap book of articles on questions of Imperial interest.

(*e*) Study our land frontiers and sea communications.

(*f*) The Round Table contains instructive articles on Imperial questions.

(*g*) During the course of all your reading think out the views of the various authors, but form your own opinions and be capable of stating the train of reasoning which has influenced your conclusions.

PART V.

SUMMARY.

29. (*a*) Work on a definite system and to time table. Distribute the time you are prepared to work daily between subjects according to your prowess in each and their mark value.

(*b*) Study all subjects with a view to applying what you have read. Form your own conclusions and be capable of arguing them out.

(*c*) This entails ability to think and write concisely, logically and rapidly.

Practise against time.

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(*d*) In all subjects make sure you know what the problem really is before you attempt to solve it.

(*e*) In the examination divide your time between all the questions according to their mark value.

Leave none unanswered.

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MILITARY READING.

By Lieut.-Colonel A. B. Beauman, D.S O., the York and Lancaster Regt.

The officers of to day may, as regards reading, be classified into three categories:—

(*a*) Those who are naturally fond of reading.

(*b*) Those to whom reading is naturally distasteful.

(*c*) Those who like reading in a general way, but who are not sufficiently keen on it to overcome difficulties in securing or selecting good reading matter.

With the first two categories this article does not propose to deal. The officer to whom reading is a passion is almost certain to go far in his profession provided he has the necessary character to make the best use of his knowledge. "Knowledge is power" is only a half truth. Knowledge leads to power in the army, as in most other professions, only if combined with initiative, driving force and judgement.

For those to whom, owing to some mental trait or faults in their early education, reading is distasteful, little can be done. They are a small and rapidly dwindling minority of officers now-a-days. They are often good leaders of men and good sportsmen, but they can seldom hope, under modern conditions, to rise even to a Lieut.-Colonel's command.

Both these categories, however, contain but a small percentage of officers. It is to the third category that the vast majority of officers and particularly junior officers belong. With a certain amount of judicious encouragement they are likely to become fairly regular readers, with infinite advantage to themselves and a great enhancement of their value as soldiers. It is, therefore, an important duty of senior officers and staff officers to ensure that the necessary encouragement and facilities are forthcoming.

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Reading, provided the material is suitable, may have three different effects on the reader; it may add to knowledge, it may stimulate the brain, and it may influence character. These three effects are equally important, yet very often only the first is considered to be so, with the result that officers are encouraged to accumulate rapidly much greater stocks of military knowledge than their brains can comfortably digest. Reaction naturally follows, and military reading becomes a noxious and wearisome toil instead of a pleasure.

In short, the motto for those officers who wish to read and those who wish to encourage reading should be "Don't be narrow, and always mix your reading".

By narrowness is meant the theory, somewhat widely held, that tactics, strategy, organization, and armaments are the only subjects that are really worth attention by the military reader. No theory could be wider of the truth. Battles and wars are won or lost by men, not by theories or inventions. Napoleon swept away the armies and generals opposed to him as much by his will power, his knowledge of human nature and his energy as by his tactical and strategical skill. This is clearly shown by the fact that so long as his physical and mental powers were unimpaired he never lost a battle even when his tactics were faulty, as on several occasions they undoubtedly were. It follows therefore that, to learn the secret of his success, we must study Napoleon as a man as much as we study him as a strategist or a tactician. What is true of Napoleon is true of every other general. We can therefore evolve the following truth; if you want to get at the vital lessons of a campaign, you must study the characters and methods of the men who conducted it as well as the actual movements of troops.

Military biography is, therefore, in the opinion of the writer of this article, the most important form of military reading. It is unnecessary to give a long list of the best of such works. Two however may be mentioned. The first, Henderson's Life of Stonewall Jackson is a classic. It has three distinct values; as a study of strategy and tactics; as a study of an unselfish, wise and determined leader; as a model of lucid, well balanced

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and perfectly expressed military writing. The second example, Trotter's Life of John Nicholson is entirely different. The tactical and strategical lessons are negligible; the writing of its author, though competent, is undistinguished; but it has a unique value because it portrays the life of one of the greatest personalities that has ever been produced by the British race. The abnormal mental and physical energy, the dominating will power, and the self-sacrificing zeal of this remarkable man can hardly fail to fire the imagination of even the dullest reader. It can be safely said that to read either book would be of as much real value to the average young officer as the weightiest volume on strategy or tactics.

Another form of narrowness, that is still somewhat prevalent in the army, inclines to the theory that only books that deal directly or indirectly with military subjects or personalities are worth reading. According to this school, soldiers should live in a little world of their own, quite oblivious of the great political and social movements that may affect the nation or the rest of the world. A distinguished soldier has recently written "All politicians are bad. Some are worse than others". This sweeping assertion may or may not be true, but whatever we may think about it, it is both illogical and absurd for officers to refrain from studying the political and social movements and changes of their times. It is the Government of the day, which is after all, in Great Britain, composed entirely of politicians, that lays down the policy that may result in peace or war. As regards the British Army outside India every penny of pay for officers and men, every article of equipment from a heavy gun to a button on a soldier's tunic, is included in estimates that have to pass the vigilant scrutiny of Parliament, *i.e.*, the politicians. In India, certainly, the situation is not quite the same, as His Excellency the Viceroy can certify estimates if they fail to pass the Legislative Assembly, but even so, political opinion is bound to have a growing influence on army policy. Enough has been written, it is hoped, to show that political events are bound to have a repercussion, direct or indirect, on military affairs. It follows therefore that every officer should have some knowledge

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of the leading statesmen of his day and their policy both home and foreign. This can best be achieved by reading books, periodicals and the more sober newspapers, which deal with recent or current political and social problems. Books such as the "Economic consequences of the Peace Treaty" by Keynes and "The Genesis of the War" by Asquith; periodicals such as the "Nineteenth Century" and the "Round Table"; papers such as the "Sunday Times," the "Observer," the "Pioneer," and the "Statesman" are examples of the type of literature which is likely to keep one *au fait* with the more important problems of the day.

There are other factors that make it important that an officer should have considerable general knowledge. Nearly every man he commands, whether British or Indian, has a home somewhere which he occasionally visits or with which he corresponds. Indirectly therefore the soldier is liable to be influenced by social and political problems that are interesting the civil population. It is most desirable that the officer should be able to give his men sane and sound advice on such problems, and he can only do this if he has some knowledge of them. They are often presented in a distorted but plausible manner to soldiers by ill-disposed persons, and it requires argument backed by facts to dispel these bad influences.

Any officer who rises high in his profession is bound sooner or later to be called on to work in close co-operation with political and civil authorities or even to exercise administrative powers over civilians. It stands to reason that any officer who has confined his interests to purely military matters, stands at a great disadvantage under such circumstances. The civilian has interests, modes of thought and points of view different from those of the soldier, and unless the latter has made some study of them friction will inevitably arise when the two come into close contact. Many such cases arose during the war, with most unhappy results. It is certainly not intended to put the blame for these occurrences entirely on the soldiers, for the fault was often clearly shared by both sides. But in some cases at any rate a little more knowledge on the part of senior officers of the methods and points of view of civilians might have saved unnecessary friction.

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It may be thought from the foregoing that the present writer advocates the neglect of the more serious professional books on strategy and tactics. This is certainly not the intention. Such books are of undoubted value to all officers, but if thrust upon the average officer in too large quantities they are liable to lead to mental indigestion. They should be carefully mixed with works of greater human interest.

To sum up it is suggested that the following annual reading programme, if adopted by the average officer, should lead to satisfactory results. It is put forward as a minimum and should be increased or varied according to the individual tastes of the officers concerned.

(*a*) One serious book on tactics or strategy. (Example: Handerson's "Science of War").

(*b*) Two or three biographies of great military leaders or administrators. (Example: Robert's "Forty-one years in India").

(*c*) Two or three books on the great war, including those dealing with the Naval and political aspect. (Example: Winston Churchill's "The World Crisis").

(*d*) Books dealing with current European or social questions. (Example: Bowman's "The New World").

(*e*) A periodical such as "The Round Table".

(*f*) Service periodicals such as "The Army Quarterly", and the journals of the "Royal United Service Institution", and "United Service Institution of India".

(*g*) A weekly paper such as "The Sunday Times".

(*h*) Daily papers such as "The Times" if at Home or "The Pioneer" if in India.

An officer who reads on these lines should be able to form sound and broadminded views on all the important military and general questions of the day.

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No officer can however be expected to be constantly supplying himself with books at his own expense. It is therefore essential that officers responsible for the upkeep of military libraries should ensure that they are supplied with books, periodicals and papers of real value and of general as well as military interest. To attain this result careful study and selection is necessary.

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SOME THOUGHTS ON FRONTIER FIGHTING.

By Colonel C. Kirkpatrick, C.B.E., 3-12th Frontier Force Regt.

Most people are weary of Waziristan, and for that reason perhaps many of the lessons learnt, and tactics adopted by our troops there during the last four years appear to be in danger of passing unnoticed.

This is not as it should be, for seldom hitherto have our forces been employed trans-border for so long a period at a time, and under such varying conditions, nor has there been as much opportunity for testing different tactical methods in the hills.

It is a platitude to say that the principles of war are few and simple, and that only in their application are they difficult, yet in frontier warfare we all know this is more than ever true.

In this article I shall endeavour to treat of hill tactics mainly, and will, as far as possible, avoid reference to the normal difficulties which at all times complicate warfare in such a country; problems of transport and supply, devastating floods, intense heat and sickness in summer, cold and snow in winter, lack of roads (until made), political and other restrictions.

Although these are vital factors and may mean sleepless nights to the higher commanders, yet the troops merely recognise them in added physical discomfort and as just causes for complaint.

Since December 1919, when the Mahsud Campaign started, conditions have been constantly altering.

There was the severe fighting up the TAKKI ZAM in face of great difficulties, which formed the first phase of the operations and which necessitated a methodical and slow advance. The occupation of Mahsud country then commenced in comparative tranquility. This however was shortlived, and in the spring of 1921 fresh trouble broke out which again

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died down until early in 1923, when certain operations had to be undertaken against some undefeated die-hards. After another severe lesson, the country once more began to settle down.

During these years of fighting and occupation most types of hill operations have been exemplified in very varying conditions of country and enemy hostility; piquetting of all sorts—attacks—rear guard actions—destruction or rounding up of villages—combined air and land operations—and lastly and continuously, protection of long lines of communication. These operations have taken place amidst such different terrain as the bare stony hills of the lower valleys, the wild crags and forest clad slopes of the high lands, or again in the more open valleys and rolling plains of the Sarwakai and Wana areas. There should be lessons to be read from these.

Before however trying to deduce them, let us clear our minds as to the developments in tribal tactics and establish a certain basis for argument as regards the application of the principles of F. S. R. Most wars at their start demonstrate that new methods must be adopted in applying the old principles of war. The Tirah Campaign, the South African War, and finally the Great War have all at their commencement brought the soldier face to face with new problems; and the Mahsud Expedition was no exception to the rule.

Consider firstly the changes made in the new F. S. R., and Infantry Training as a result of the Great War.

The problems involved in organising and carrying through a successful attack in face of various degrees of resistance and the tactical methods to be adopted are now much more fully discussed.

Similarly the roles of troops in defence, varied according to the strength developed against them, are clearly defined.

The chapter on hill warfare has however not yet been brought up to date, and we have still to try and work out the best means of adopting the tactical methods of the first chapters to our needs in the hills occasioned by the use of modern weapons; in face of varying degrees of opposition, with all the inherent difficulties

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of frontier war. The bed rock of it all, as Infantry Training says, is fire and movement; yet how difficult it is to give the first effectively, and without it, movement becomes dead.

The same cause which changed our tactics in the South African War, *i.e.*, a hostile population armed with a magazine rifle, must alter old methods; but F. S. R. in discussing hill warfare, still does so with reference to campaigns against savages. The Mahsud and Afridi can no longer be considered savages in a purely military sense either in armament or tactics; for every able bodied man has a rifle, and the Mahsud minor tactics leave little scope for criticism—Wazirs, Mohmands and other tribes have armed themselves in greater or less degree and have got to be reckoned with according to their fighting qualities. We must train however to meet our most formidable potential foes, who incidentally inhabit some of the most difficult country on the frontier; and they are the Mahsud and Afridi.

If we are to fight an enemy equally armed as regards rifles, logically, hill tactics should tend to follow more closely the methods advocated for civilised warfare. In fact Infantry Training now lays down that the same principles will apply against an enemy whose armament and organisation is inferior to that of a European Army, but there is a very real restriction to this in the hills, in that the enemy, being still savages at heart, we cannot abandon our wounded; and what this means requires consideration.

Except in an advance, it may directly affect operation. This will be further discussed later.

The outstanding feature of the Waziristan operation was the power of the 303 Magazine rifle in the hills.

The main points are:—

(1) Its accuracy and range allow casualties to be inflicted at 1,000 or 1,200 yards.

Smokeless powder and plenty of ammunition allow small bodies of tribesmen to lie up amongst scrub and rock, invisible until they move, and these have great power to check movement.

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(3) A frontal attack against these parties cannot be made without fire support. This is indeed a platitude, but latter we will discuss the difficulty there is in providing it quickly and effectively.

(4) The tribesman, being man for man faster on the hillside than the soldier, and his most deadly range being between 500 and 700 yards, he will seldom wait till troops get close enough to endanger him, and in these circumstances few attacks in their final stages can be anything but frontal.

(5) Aware of our partiality for so-called covering fire, the enemy no longer occupies obvious shell traps like the tops of hills. Also, knowing that sangars draw fire, he arranges a few (not too conspicuous ones) for this purpose.

(6) In any operation but an advance, the enemy can often locally transfer the choice of the initiative from us to themselves. They know that a few casualties, made perhaps from long range, will tie up a Company; and if casualties occur in a party whose subsequent line of withdrawal is not already secured, arrangements must be then made to get them back, and this is bound to affect the conduct of operations.

(7) With increased power to keep troops at a distance, outflanking movements if made are lengthy and protected.

(8) Finally, the relative ratio of higher mobility always enjoyed by the tribesmen is vastly increased by the power the rifle has given them of enforcing wide movement in default of adequate fire support being given to a direct attack. And here we can refer to the new Infantry Training which lays down that against an extended front it is rarely possible to envelope until penetration has been achieved.

Some people still advocate that too much gun support or display of force should not be used until flank attack is well developed. Unless the frontal attack is well supported, it will never advance against magazine rifles and there will then be no flank attack.

Marshall Foch has said—"In the past the unknown disappeared the moment the battlefield was entered—Smokeless

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powder has changed the picture and made the unknown both complete and lasting".

Vastly increased and accurate fire power, relatively greater mobility, and now the employment of organised tactics, have augmented the tribesmen's advantages whilst we have not adequately counter-balanced them by modern developments, except perhaps by the introduction of the 3·7 Howitzer.

So for instance it has come about that the previous methods of advance into transborder territory by piquetting to the objective, will, if any opposition is met with, develope usually into attacks to secure the positions that must be held.

Infantry Training now indicates that in an encounter battle, once touch is gained, the action of the advanced guard soon merges into an attack owing to the power of the defence.

The ·303 in the hills has produced the same effect on normal piquetting. Extend this theory, and we will realise that with magazine rifles the transition stage between withdrawal and rearguard action will also be brief, and this change will occur more often and rapidly than formerly.

Unless by surprise (which is shortlived), by a right advance (which is akin to surprise), or after a defeat of the enemy in a stand up fight, as happend on occasions in General Skeen's advance in 1920, it is hard to imagine an advance being anything but slow in face of any definite opposition under existing conditions.

To undertake operations other than a surprise raid a column must therefore be out some time to complete its work.

Once you acknowledge this, you are faced with holding a L. of C. to feed the column, to keep it supplied with ammunition and to evacuate its casualties, which latter it cannot carry about, and then the striking force melts. As previously mentioned, our main factor in clearing ground rapidly now is the 3·7 Howitzer. Use it, and you must at once consider getting up its ammunition, for only 20 rounds go on a camel. It will be rare therefore now to see a column advancing, and at the end of the day, pulling in its piquets behind it and severing its connection with its base.

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But, you will say, the infantry must largely fight its own way forward with its own weapons even though the enemy has many advantages—fire and movement must be developed in the hills like anywhere else. If we read what is said on this vital subject in Infantry Training, the difficulty of the cook with the recipé for jugged hare is brought to mind; for targets to fire at are an essential to the business. In plain or rolling country dimensions are mainly measured by length and breadth; but in the hills we have a three dimension objective, with length, breadth and height.

Against the two dimension plain objective, much of the fire that is directed across the area although not actually hitting its target, is sufficiently "Covering" to be of definite assistance for movement. But in a three dimension objective it must "hit" or "miss" if movement is to be covered. That is one point.

The second is recognition of the targets.

It is extremely difficult to locate enemy groups holding up an attack concealed amidst broken rocks and scrub. Even when spotted through glasses, it needs all an officer's descriptive powers and perhaps a pointer staff to get his N.-C.Os. to see the places. His N.-C.O.s having seen the targets and given fire orders to the men, the betting is that four out of five of the men will not be firing at the places indicated, owing to difficulty in recognition. Result; the enemy continues to inflict casualties till such time as the howitzers get on; when, with the radius of burst of the 3·7, the enemy feels the situation is getting dangerous. Meanwhile time has passed, the advance has been checked, and casualties have occurred.

The so-called "prophylactic shooting" (indiscriminate plastering of a hill side by gun and rifle fire sometimes resorted to because troops cannot locate what is holding them up), harms no one, is wasteful of ammunition and bad for moral.

Something is required to place the infantry man on more level terms with the enemy. Follow that forward platoon up the spur.

A few dropping shots perhaps from 1 000 yards off, somewhere up on the left front. The platoon climbs on until a man

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falls and they lie down facing that direction to reply to the fire. Suddenly they are swept from 700 yards half right by a burst of "rapid", which ceases as quickly as it began. The support platoons are pushed up spurs further to the right under "covering"(?) fire; but the Vickers' guns have not spotted the enemy, and the forward platoon Commander cannot accurately gauge the situation; even if he could he has no means to describe it rapidly and sufficiently for those further back to open really effective fire; so the support is in turn held up. The leading platoons will only incur further casualties if they push on without adequate fire support. This common phase of an infantry soldier's problem needs an antidote. Let us give him an easy means in the hills to indicate a target rapidly to all concerned. A day light tracer or an efficient smoke trail bullet visible throughout its flight on a bright day would be of the greatest assistance if available for all down to section Commanders and would help to quicken "fire and movement" in the hills. In 1914 the R. A. F. and a Martini tracer of great luminosity and explosive burst. Surely we can device some such bullet to counter-balance some of the tribesmen's latest advantages.

Failing a sufficiently luminous ·303 tracer, let us have the Martini tracer, and one M. H. rifle for every platoon.

If we get this, we will get indication of targets. The rest the infantry man must do for himself; fire direction and control brought to the highest standard it is possible to achieve.

Then we will obtain fire and movement; and with it rapidity of action. Let us now consider infantry formations in the different phases of hill fighting. Those that were adopted for advance against a comparatively small number of riflemen backed by followers with swords, standards and drums need modification now.

That was early discovered in Waziristan; yet piquetting troops are still seen "marching at the head of the main guard" usually in fours; and in a withdrawal the red flag is frequently observed following close behind a dense column of troops.

Such formations will not last long transborder.

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Our Infantry Training gives us definite formations for the battalion, company and platoon in the various phases of modern battle.

How can we adopt these to the hills?

In what formations should the vanguard, main guard and piquetting troops move or how should the rearguard be disposed in passing through broad and narrow valleys respectively? These formations must be such that bunched targets are not offered, yet they must allow rapid change from march formations to movement by bounds, which is the recognised method of movement in battle.

In advance and withdrawal we must bound with our infantry companies, with our platoons, with our Lewis' guns and Vicker's guns, and with our pack artillery; but we will not readily do this from hill valleys unless our preparatory formations are suitable and certain preliminary steps are taken. Our army is much more complicated than it was, it can very easily get "tied up", and it then becomes a very vulnerable mark.

One formation for a battalion piquetting in a valley of say 300 yards broad with one company advanced guard, one company piquetting troops, is shown in diagram 1. This allows the piquets likely to be immediately sent up to be ready in the vicinity of the advanced guard commander, and yet keeps the formations fairly open and available to assist with fire if checks occur.

The replacement of platoons from rear to front of the diamond is automatic.

This is only one of several formations suitable.

Similarly, a rearguard working with one company or half company retiring alternately with another is shown in diagram 2. In this case the movement of the rearguard flag must be controlled separately to the movements of the companies or half companies and so that it is always about 300 or 400 yards from the rear line; the rear line of course moving back generally in line with the retiring piquets.

This diagram is only given to make the point that troops must not cluster and offer targets in the vicinity of the red flag

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and the Commander must see that the movements of the red flag and the alternate movement of the companies (if this is necessitated by enemy attack), are controlled adequately by separate officers; for he himself will be fully occupied in ordering the retirement of the piquets and the general conduct of the operation.

Such formations are fairly obvious, but although piquetting is often practised, the much more difficult control of the various covering parties is often insufficiently attended to.

As regards retirements; what was known as the block system of retirement was very generally used in Waziristan.

This is peculiarly suited to conditions of an L. of C. with permanent piquets, when road protection troops go out in the morning and fall back on the same line in the evening with the returning convoy.

It is merely an ordered method of further strengthening the flanks which if attacked strongly will not be able to resist sufficiently in face of modern rifles, with piquets only located 600 or 800 yards apart.

It is more likely to be used than formerly, both in conjunction with permanent piquets, and without; because, as previously argued, the simple withdrawal down a nullah is more easily and often interfered with now because of long range magazine rifles. Unless the method to be adopted in withdrawing reinforced flanks is worked out beforehand, difficulties and delays will occur. The power of the ·303 will often compel a fighting withdrawal, and if any strong attacks are anticipated on the flanks, it may be best to adopt this system from the start of the operation rather than risk the difficulties of a change of method in the middle.

Whilst however retirement through a series of organized covering positions by battalions and brigades has always been recognized by us, when it comes to applying this method to small bodies in the hills, controversies arise, due I think to the fact that for a considerable number of years a system of withdrawal through lightly held hill tops (piquets), usually sufficed in view of the inferiority of the armament of the tribesmen.

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If attacks then became severe, the necessary step by step withdrawal that ensued was very slow, and with wider extensions it will become slower, because it was not automatic, it was not pre-arranged, and troops were ordered into their positions often by the rearguard commander on the spur of the moment, instead of by the advanced guard commander; as is the case with larger bodies and in operations on a larger scale.

The basis of all tactical withdrawals must be speed; speed combined with security, and unless all methods are practised speed cannot be expected. There must be no hitches or delay.

In the block system, battalions in a brigade, or companies in a battalion, have three portions in positions in sections on the line of withdrawal, with the fourth portion held in readiness in reserve close to the last section.

Thus in a battalion withdrawal from Y to Z, (vide Diagram No. 3) rearguard positions are taken up covering Y by A Company in A Block, D Company is held in battalion reserve. B Company moves off piquetting with usual precautions and disposes itself on Block B.

Once that ground is occupied and held, C Company passes through and piquets out and occupies "C" Block. The withdrawal is now ready to start.

The battalion commander acting as rearguard commander throughout may or may not utilise a red flag (as the withdrawal is by company blocks a flag is really not necessary).

As soon as the rear company has withdrawn under protection of B Company, the Reserve (D) Company passes rapidly down the nullah to occupy Block "D". A Company then becomes Reserve Company.

Each company commander having disposed his company, arranged for the rapid and mutul withdrawal of his platoons and sections and intimated the signal he will give for his block to commence their withdrawal, moves to the rear line of his block to meet there the battalion commander as he falls back.

The battalion commander then personally gives him the order to start his company block withdrawal whenever the rear company

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is safely back; the reserve (A) Company falling back to take up Block E if necessary.

This method ensures a safe and quick withdrawal. There should be no delays, if each portion knows its job and slips off mutually and rapidly. The presence of the company commander with the battalion commander at the commencement of his block is most important so that no hitch occurs throughout.

By this method, a battalion can withdraw for 3 to 4 miles at least very rapidly and offering strong opposition to flanks and rear, and a brigade could thus do 10 or 12 miles under similar conditions, which in face of hostility is about all it should be asked to do in the hills in a day.

This method is not suitable when the flanks of the nullah are knife edged, difficult rocks. In this case the fewer men there are to be got off such places the better, and piquets supported by V. G. and artillery fire are best.

It will be understood that the two methods being dissimilar, it is very difficult to change from one to the other once withdrawal has commenced. The rearguard commander will generally therefore settle beforehand which method he will employ.

The question next requiring consideration is the action of the Vickers guns and pack Artillery.

Roughly it may be said that the pack howitzer has most influence in dislodging enemy from sangars and from cover by searching and sweeping areas known to be occupied. It can engage enemy located on high hills and in hollows thus giving support to infantry otherwise unobtainable.

The gun, besides covering infantry in most situations, is specially adopted to engaging fleeting targets not only because of its rapidity in getting into action, but because by direct shooting it can deal with those targets against which the howitzer, by reason of its slow time in flight, is not so effective, and this is most valuable in a retirement. The gun can also act against overhanging rock shelters occupied for protection from the air, which are difficult for howitzers.

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The Vickers guns fill the gap between gun and howitzer positions, and in close support of infantry can take on targets often invisible to the guns. Their rapidity of getting into action and rate of fire increase their value in dealing with fleeting targets in a withdrawal.

The control and co-ordination of these weapons in the hills is not different from that anywhere else; but in an advance or withdrawal special considerations come in.

They have all got to move by alternate bounds conforming with the moves of the infantry. Unless these moves are specially controlled, the three weapons will not be used to the best advantage and especially in a withdrawal, we may find guns and Vickers guns trying to establish themselves in the same positions, or failing that, in very close proximity to each other.

The next point is that, as previously shown, unless the infantry has immediate and close support in the hills, it readily gets held up.

In a mixed brigade there will usually be one pack howitzer and one pack gun battery of four guns each. Some gunners cannot face splitting their batteries, but in a piquetting advance or retirement, especially the latter, infantry may need close gun support at any moment, and artillery must be in positions ready to give it if asked for.

It will seldom be possible to arrange for this with only one lot of guns moving at a time. At least three groups are required to allow of one group being in action continuously and to enable bounds to be made of reasonable length. Also because the ground may not admit of adequate support throughout unless guns are located at certain points. Lastly when the time comes of withdraw, the rearguard should not be checked by a large mass of pack artillery personnel and mules to be got back. A section is easily got away.

A large amount of shelling is not required and sufficient control should be possible by a subaltern and the personnel of a section helped out by battery H. Q.

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In Waziristan sections were given extra equipment to enable them to be utilised above. Extra rangefinders, clinometers, directors, etc.

The difficulty of course is personnel; but if it has to be a choice between a battery complete with maximum control, and a less efficient control but continuous and fairly effective support, there is little doubt which the infantry man who is most concerned will vote for, and the role of all artillery is "to afford all possible support to the infantry".

The control of guns thus echeloned back to support a withdrawal remains to be considered. Should it remain in the infantry brigade commander's hands or in the rearguard commander's, assisted by O. C. P. A. B., if present, and the battery commanders?

One thing is clear, that the rearguard commander has his hands too full to be alone responsible for ordering guns back, yet it is he who has his finger on the pulse of the situation, and alone can tell what artillery support is needed.

The O. C. battery in action supporting the rear guard must be with the rear guard commander and must act under his orders. This has the seeming disadvantage of divorcing guns echeloned back from the infantry brigade commander's control; but you cannot have it both way, and, if the procedure is reversed, the rearguard commander will not get the best use of his artillery and it is he that is fighting the action. In a block retirement where one battery say is allotted to the advanced guard to support companies up into their block, thereafter to establish itself in positions to cover the withdrawal, the battery should come under control of the rearguard commander as the rearguard falls back into its zone, the battery commander reporting to rearguard H. Q.

Use of telephones in a retirement are problematical and should not be counted on. Troops should aim at withdrawing quicker than a line can be rolled up if cable wagon cannot be used; but a telephone line should not be included within the number of those things which it is a point of honour not to leave behind.

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The subject of hill tactics has been treated somewhat generally and there is not space in this article to describe certain other phases of minor tactics, or the methods of protection adopted on the different lines of communication at various times details of which often differed considerably.

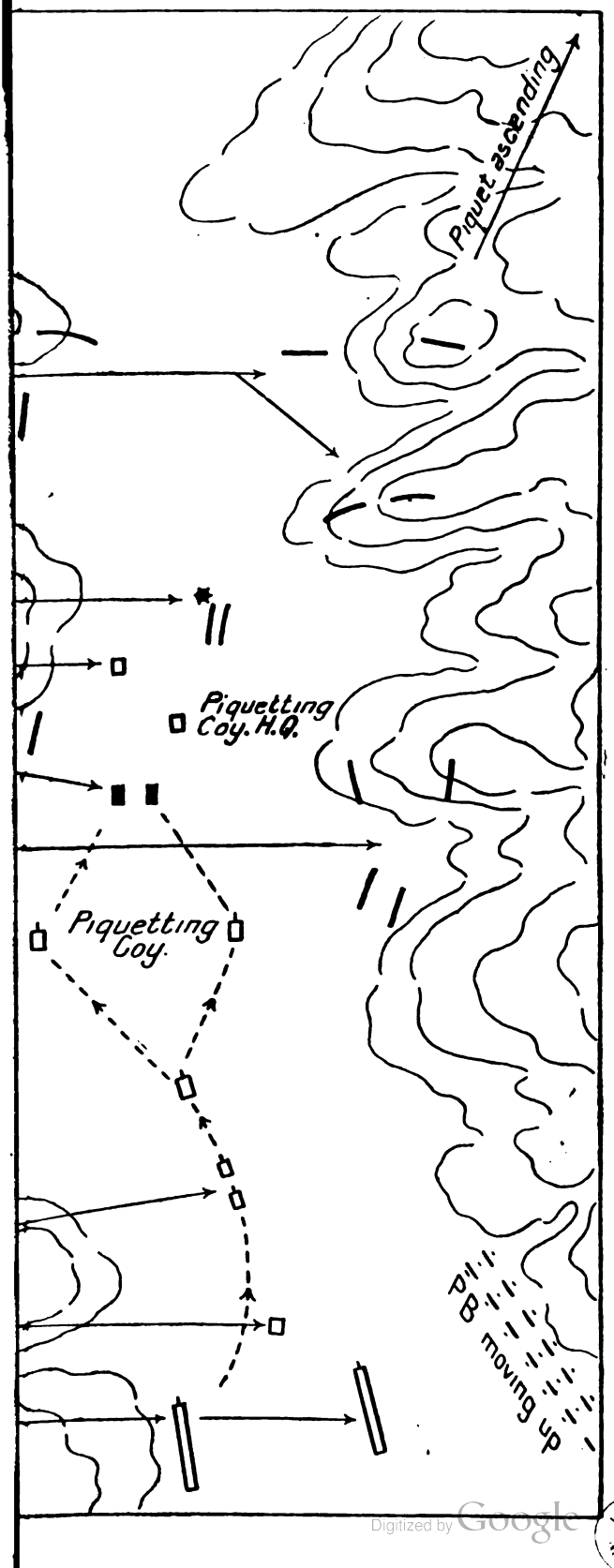
No one who has served some time in Waziristan will deny that now the task of tackling a thousand or even five hundred well armed tribesmen is no light one.

It is hoped that this article has shown some of the reasons why this is so, and that there are many tactical matters requiring consideration of all soldiers as exemplified in Waziristan during the last four years.

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Diagram I.

Advanced Guard Dispositions.

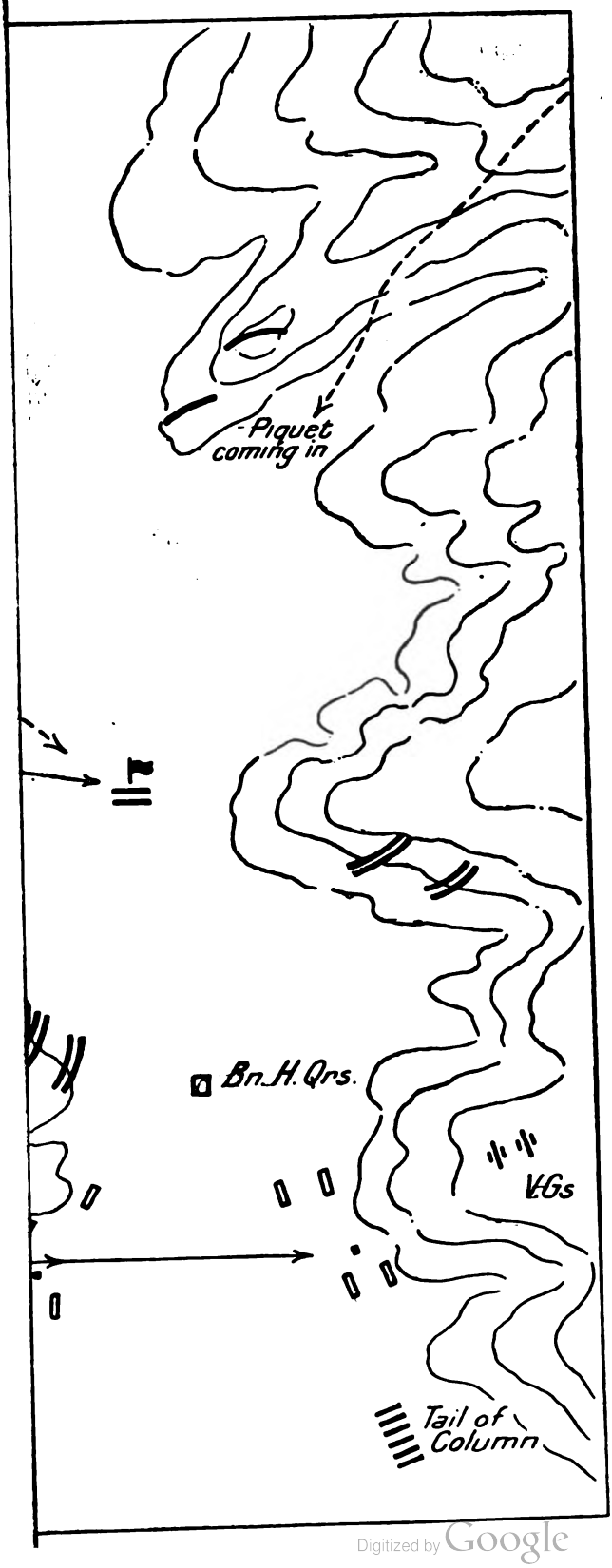


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Diagram II.

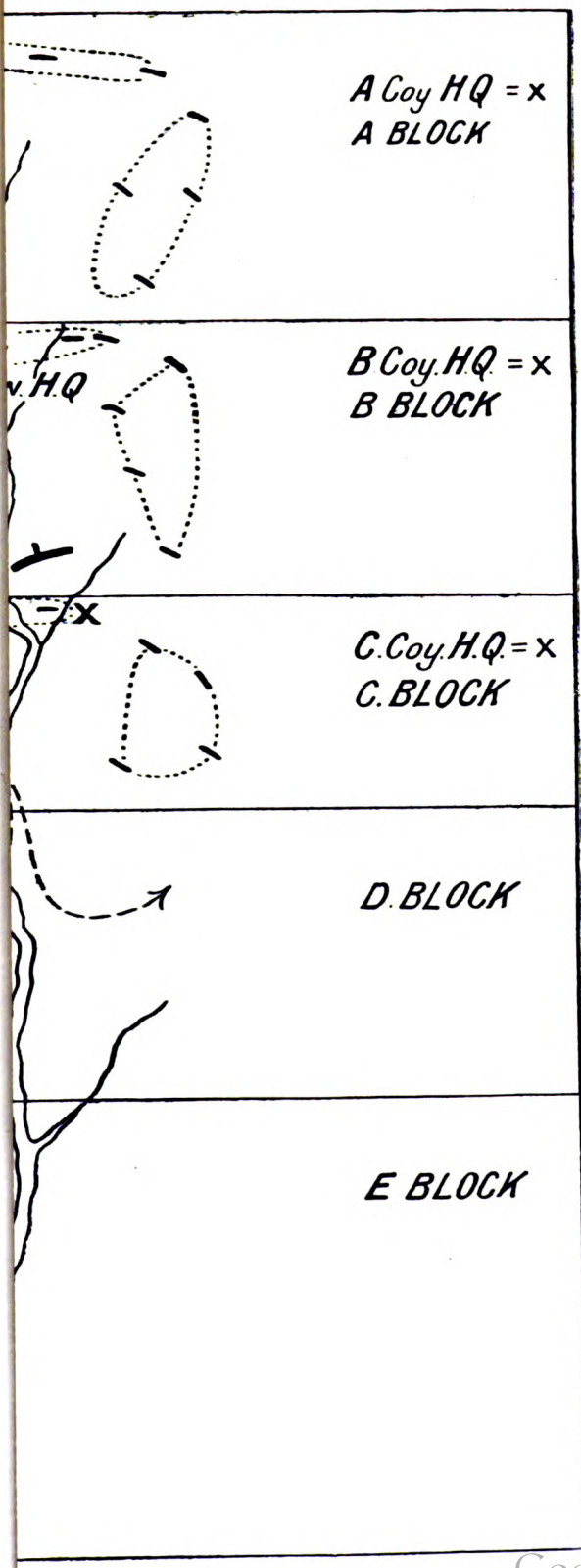
positions of a battalion withdrawing piquets.



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iagram III.
tem of withdrawal



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LEWIS GUN ORGANIZATION & TRAINING.

A REPLY TO COLONEL KEEN'S ARTICLE ON "LEWIS GUNS IN FRONTIER WARFARE."

By Major J. G. Lecky, 29th Jat Regiment.

Colonel Keen in his article (see Journal' for January 1924) has invited comment, and this has encouraged me to put forward the following point of view in the hope that some feature in it may be found of general interest.

I agree so entirely with Colonel Keen's advocacy of the Lewis Gun on the Frontier, that I do not propose to comment on this part of his thesis—merely registering an opinion that those who have no use for the gun on the Frontier are in the minority and become fewer day by day.

Such comment as I have to make deals with the latter part of his article; *viz.*, on the most suitable organization and training of Lewis Guns for Mountain Warfare.

* * * *

It will usually be found that when people are about equally divided between two opposing views, the soundest course lies in some central policy in the nature of a compromise between the two.

For example:—Having discussed the subject with many who hold the view that Lewis Guns are best organized in single guns as an integral part of each platoon, I quite see the strength of the case which can be made out for organizing them in this way; on the other hand I can see an equally strong case for those who think that they should be organized as a group of guns in the Company.

And so equally balanced do these conflicting opinions, and the arguments that go to make them, appear to me, that

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personally I have been induced to seek for a solution somewhere in between the two of them.

And the suggestion I have to make is that the efficiency of the average Lewis Gun Section would be appreciably raised if, for purposes of all technical training, and also to a limited extent of tactical manœuvre as well, the Lewis Gun Sections of a Company were to be grouped together under one responsible head.

At the same time, as regards tactical manœuvre it should be quite clearly understood that, since the *normal* role of the gun will be to accompany its platoon into action, it must be taught this role first and before anything in the nature of combined action as a group is attempted.

The point is that, trained as a group, it becomes a simple matter to attach Lewis Guns to platoons as required, particularly as they will have been trained for the part whereas on the other hand, trained solely as the integral part of a platoon, they will remain untrained to overcome the difficulties which arise whenever it may be necessary for them to act together as a group.

* * * *

Colonel Keen considers that the Lewis Gun owes its inclusion in the platoon to the recognition of the latter as "The Infantry tactial unit," and also because the platoon, as a tactical unit, should have the power to produce in itself effective covering fire to its own movements.

It seems to me that before we can completely accept this statement, two points require examination.

In the first place, is the platoon "The Infantry tactical unit"?

In one sense of course it is, since it is the smallest self contained unit capable of manœuvre; in another sense it does not seem to me that it is; because, though a Company Commander thinks in terms of platoons, a Battalion Commander thinks in terms of companies, and so on.

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Consequently, the size of what can be regarded as the Infantry tactical unit varies in accordance with the status and importance of the commander who is considering any plan of manœuvre.

The point I wish to make is that in proportion as the tactical unit under consideration increases in size, so does the special weapon attached as an integral part of that unit for purposes of covering its movement, get larger and more important.

Thus the brigade has guns.

The battalion has Vickers guns.

The company ??

The platoon has Lewis guns.

And I suggest that the fact that the platoon happens to be the tactical unit from the Company Commander's point of view, is not *necessarily* a sufficient reason for distributing a Lewis gun to each.

The second point for examination is :—

Is the introduction of the Lewis gun into the platoon necessary to produce covering fire for its movement?

I suggest that the rifle is the more natural weapon to use for covering the movement of small units such as the section that go to make up a platoon, leaving the Lewis gun in the hands of the company commander to help on the movement of the platoons that go to make up the company.

If the rifle sections of a platoon are properly trained, these sections should be able to manœuvre under cover of their own fire, independent of any other weapon that the company commander may detail to support their movement. While on the other hand, the fact that the company commander would be able to influence the fight by the concentrated fire of such of his Lewis guns as he had kept under his own control, seems to me a very desirable situation to establish.

I believe that what has led certain of us to cast an eye of disapproval on Lewis guns in frontier fighting, is the fact that

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their introduction into the platoon as a platoon weapon has resulted in overshadowing the performance of the rifle, and so has led to an attitude of mind minimising the importance of the latter.

* * * *

Following upon the above considerations, I suggest that the present organization of the Lewis gun owes its origin, not so much to the inevitable result of the platoon being considered the Infantry tactical unit, as to the fact that Lewis gun is recognised as unsuitable for overhead fire under *normal condition*; and that experiences in the recent war have indicated normal conditions to be undulating country and not terrain such as is found on the North-West Frontier. And though as a general principle on which to base its organization it may be difficult to resist the argument that, *under normal conditions* the Lewis gun cannot properly pull its weight unless situated in the front line, and consequently should form an integral part of each platoon; still, this organization having been definitely adopted to suit the normal, the problem becomes how to adapt it to the abnormal, in particular to the hills of the North-West Frontier, where after all the Indian Army may primarily expect to fight.

For this purpose let us consider what role we expect the gun to fulfil and we are training the gun to team to carry this out.

The training of a Lewis gun section falls naturally into two parts:—

Training in technical work.

Training in tactical manœuvres.

The efficiency of the section being dependent about equally on both.

The technical training is very efficiently taught at the small arms schools, and the lead that they give in this instruction can be easily and effectively spread throughout units by means of the battalion training cadre.

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Such training includes :—

(*a*) Action of the mechainsm.

(*b*) Stripping and reassembling the gun.

(*c*) Immediate action to rectify stoppages.

(*d*) General care of the guns.

(*e*) Allocation of duties.

(*f*) Organization of ammunition supply.

(*g*) Coming into and withdrawing from action.

All these are subjects of great importance and require frequent practice, but are incomplete without training in tactical manœuvre.

Tactical manœuvre, on the other hand, is not very much developed at the schools, where the instruction is concentrated on the technical rather than the tactical side of the training.

Under these conditions we can only turn to the training manuals, and, as Colonel Keen himself admits, some further guidance is required beyond the broad principles which they contain.

It is always more difficult to evolve, the method of putting principle into practice than to define the principles themselves and the latest and clearest instructions we have been given in this respect with regard to the tactical handling of the gun, is in the following ruling given by the C. I. G. S. :—

"If the tactical situation requires the covering fire of the Lewis gun section, as will probably be the normal case, and the ground permits of their effective employment in this role, they should be used to provide covering fire in the critical phase of the attack.

If however, owing to adequate provision of covering fire by other weapons, the fire of Lewis gun sections is not required in the later stages of the attack, they should go into the assault with the rifle sections.

Whichever role is allotted to the Lewis gun section, whether that of covering fire or of assaulting, it should act as a whole,

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and it should be further recognised that as soon as the assault has succeeded, the task of the Lewis gun section will be to repel enemy counter attacks." (Report on Staff Exercise, November 1922.)

In this ruling we get a clear and definite picture of the objects which we should have in mind when training the Lewis gun section for tactical manœuvre, *viz* :—

(*a*) Normal ... Covering Fire,

(*b*) Abnormal ... Shock Action,

i.e., training in both will be necessary, but that of covering fire, being the normal, is the more important and the one on which to concentrate attention.

I propose to confine my further remarks then to the question of training for the former, *i.e.*, covering fire.

Lewis guns may be employed to give covering fire from four different places :—

I. From in advance of the front line.

II. From actually in the front line.

III. From the flanks of the front line.

IV. From in rear of the front line.

Dealing separately with these four situations :—

Situation I.—Fighting the Turks in a country like Southern Mesopotamia, bare of cover and perfectly flat, it is obviously impossible to think of using Lewis guns from any position in rear of the front line; the attacking lines would mask their fire from the start.

In such circumstances the Lewis gun would have to advance either with, or in front of, the leading line. But for covering fire to be effective it should be ready for instant application, which cannot be arranged while the unit detailed for the purpose is in movement. Consequently, in preparation for an attack on some position, the plan of sending Lewis guns forward in advance of the front line has been suggested as the best effective compromise.

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In doing so their object would be to take up a position as close to the final objective as they can reach, on the supposition that a few men sent forward in this way stand a fair chance of being merely taken for patrols, and as such are unlikely to draw heavy fire, or, even if fired on, could probably manage to creep forward in spite of it.

Or again, they might be sent forward under cover of darkness for an attack at dawn.

From these forward positions they are then ready to open fire *immediately* in reply to the enemy's fire on our attacking lines, and so to cover their advance.

When our attacking lines close in on the position of the Lewis guns, these join in with the further advance of the front line, as far as possible rejoining their own platoons in doing so, thus carrying out the second part of the role laid down for them; in this case not so much because adequate covering fire from other weapons necessarily exists, but because they cannot continue to support the rifle sections by remaining where they are.

Another example of this forward use of Lewis guns is provided in more intensive warfare, where the Lewis guns are similarly sent forward to cover the consolidation of a position won.

On the other hand this method of sending them forward to positions well forward of the front line is subject to the disadvantage that they are somewhat exposed, possibly dangerously so.

Situation II.—"Accompanying, and in the front line."

On the other hand in undulating ground and where a certain amount of cover is obtainable, the best result will probably be obtained if the Lewis guns *accompany* their platoons in approximately the same line.

It is true that in doing so they will again be unable to give covering fire while in movement, but the presence of cover suggests that there will be some attempt to utilise it in the advance, and by means of it to manœuvre into position for the assault; whereas in Situation No. I, lying in the bare open the burning question was to get across that open in the shortest possible time,

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since, there being obviously no opportunity for manœuvre, the longer you lay there the longer you were at a disadvantage as compared with the enemy.

Situation III.—"A fire position from a flank."

This should always be the aim of the machine gunner whether Vickers or Lewis, if only for the oblique fire effect that it makes possible, but short of taking the Lewis guns away from their platoons and grouping them to a flank, the only way in which they could bring covering fire from a flank, except in a very local sense, is when the platoons to which they belong are sent to a flank.

Situation IV.—"From a fire position in rear."

Bearing in mind the primary fact that *at all costs* you must not fire sufficiently close overhead or in front of your own troops as to cause them to hesitate in their advance, it is obvious that to expect to find a fire position in rear of your forward line in flat country, is out of the question.

Nor does it seem likely that there will be much opportunity of using them in this way even in undulating country.

But in the hilly country of the North-West Frontier, positions from which Lewis gun covering fire from rear position can be safely applied are frequently found.

And it should be noted that generally, they possess the advantage of being comparatively speaking protected.. This fact bringing with it certain definite advantages over the choice of other positions, such as for example:—

(i) Better fire control.

(ii) Ammunition supply facilitated.

(iii) Minimising casualties.

Here it is necessary to note certain limitations to the rear position, limitations created chiefly by the paramount need to safeguard the men which the Lewis guns are supporting, which demands:—

(*a*) A maximum range from gun position to target of 500 yards.

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(*b*) Good observation of fire.

Summing up I would draw attention to the interesting conclusion that, starting from a position in advance of the leading line on dead level ground, the most effective position for Lewis guns in relation to the rifle sections they are supporting, tends to retire further and further to the rear as the ground grows more hilly.

* * * *

Now in such forward or rear positions it is felt that occasions may arise when, for the sake of cohesion and co-ordinated action, it may be found desirable to place the Lewis guns of the company, used in this manner, under some sort of single control; this desire arises out of the fact that some of the guns may temporarily be required to operate outside their platoon area; that in fact they temporarily enter outside their enlarged scope of command of the company commander.

The situation is analogous to brigading the Vickers guns and may be summed up as follows:—

Vickers. Normally under battalion control. In certain circumtances under brigade control.

Lewis. Normally under platoon control. In certain circumstances under company control.

And the general conclusion it leads to is that *in addition* to training the Lewis gun sections to work with the rifle sections of its own platoon, they also require training in combined action for occasions when the company commander may require to handle them as a group.

It is necessary for some one to control and distribute the fire, and the section require practice in passing the controller's orders down from gun to gun.

Unless some time is devoted to such training the results will be poor, and what is worse, you will never be quite able to rely on them.

* * * *

Leaving tactical considerations for the moment and turning to purely considerations of training.

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Each platoon commander is supposed to train his own Lewis gun section as an integral part of his platoon.

Formerly, when all men in the ranks were trained in the same weapons, supervision was comparatively speaking a simple affair; the advent of the Lewis gun has complicated matters because the training required by the Lewis gun section differs considerably from that required by the rifle section and attention tends to be distracted from one to the other in consequence.

Musketry, perhaps, gives the best example of this.

The practices fired by the Lewis gunner using the Lewis gun are not the same as those fired by the rifleman, and it would be difficult satisfactorily to supervise the two together. This difficulty being of course emphasised in stations where range facilities are limited.

In actual practice I think it will be generally found that the platoon commander concentrates most of his attention on his rifle sections and that the Lewis gun section is left a good deal to the naik who commands it.

I do not want it to be thought that I defend this state of affairs, or that there may not be brilliant exceptions, nor do I even contend that the situation could not be altered by strenuous efforts on the part of the company commander. All that I do suggest is that, taking facts as they are, we could obtain what we want, (which is to raise the general average efficiency of Lewis gun sections throughout the Indian Army), more simply if not more effectively, by approaching the problem from a different angle; in other words, by allowing the platoon commander to concentrate attention on his rifle sections and relieving him of the burden of training his Lewis gun sections.

Taking the average of intelligence and military efficiency of the platoon commander, in the Indian Army, this will be found ample to occupy his whole attention and energies if he is going to work his men back to a pre-war standard, let alone anything higher.

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Anyway, what I desire to emphasise is that the platoon commanders' difficulties are *real*, for they often boil down to the fact that he cannot be in two places at once.

In consequence it is suggested that for purposes of technical and elementary tactical training, it would be convenient to group the Lewis gun sections of the company together under one control, and, in the absence of an I. O., I suggest that the company havildar-major would be a suitable man for the job.

Under his supervision the Lewis gun section would, *in the first place*, be trained in all the technical part of their training, as well as in the tactical requirements for accompanying their platoons into action.

In the second place to combined action, so that the senior Lewis gun section commander should be able to direct and control the fire of anything up to four guns in case they should ever be required to act together.

The fact that the cavalry have already adopted a troop formation for the three Hotchkiss guns of the squadron is significant and at least worthy of consideration.

At least it may be said that their organization in this way does not seem to hamper their use as single guns detached to accompany a troop; while at the same time they can be used for combined action as a group when needed.

In fact, I would suggest that "pros" and "cons" for grouping the automatic guns in this way are exactly the same in both Cavalry and Infantry, being merely more emphasised in the former.

One other feature of Colonel Keen's article remains for consideration.

Colonel Keen draws particular attention to the handling of the Lewis gun mule,—a most important point to which often insufficient attention is paid.

He points to the fact that here is a mule carrying several hundred rounds of ammunition, protected and controlled by one sepoy, with a rifle. "A bait which no Pathan could resist."

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And he advocates as a working rule, that, "the mule leader should be trained to keep as close to his platoon as the ground permits, while remembering that if the mule is hit, it means a loss of ammunition and gear, besides hampering the mobility of the platoon."

He also agrees that, "It is almost impossible for the forward platoon commander to keep looking back to see if his mule is following," and in consequence he suggests that the company commander should assume responsibility for supervision and direction of these mules.

But what strikes me about this advice is that supposing that the mule leader does keep close behind his platoon in action among the hills, it is often going to be very difficult, if not impossible, for the company commander to exercise satisfactory control over him, even if he is able to keep him under observation; besides which the company commander will have other things to think about. On the other hand Colonel Keen agrees that it will be "almost impossible" for the *platoon commander* to observe, much less control him.

Then who is to be made responsible for the safety of this mule and the directions of its movements?

The mule leader is only a sepoy, the section commander often only a lance-naik who will already be pretty well occupied fighting the gun.

I suggest that it is worth while considering whether or not it is necessary for the mule to accompany its platoon at all, in nine cases out of ten I believe that it would be better if it remained with company headquarters.

The point seems to turn largely on the problem of ammunition supply, and whether or not sufficient ammunition can be manhandled by the rest of the Lewis gun section accompanying the gun into action.

There are six pairs of magazine pouch carriers with each gun, each set of two will carry four magazines.

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If No. 2 (who carries no rifle), carries four magazines, and the remainder 2 each, this should not be unduly overloading the gun team.

i.e., 14 magazines or approximately 700 rounds; and the question is whether this amount of ammunition should not be sufficient to meet the immediate requirements of all normal fighting.

This point leads to consideration of training in relation to economy of ammunition.

In this respect it may be worth while to draw attention to the handicap of having no blank ammunition suitable for use in Lewis guns, because this is more of a handicap to training than is fully realised.

Due to this fact the unsatisfactory situation is created in which, the better the gun is concealed the less its presence is likely to be realized and its power felt.

But quite apart from this, it also prevents any satisfactory check on the expenditure of ammunition, and so of training in economy of ammunition.

In this connection it is therefore interesting to note that in the Japanese Army a perfectly successful blank ammunition is used, consisting of a wooden bullet which disintegrates with the force of the explosion. This ammunition has been used for some years and is fired from a modified type of Lewis gun, and I was unable to find anyone who had at any time heard of an accident due to mixing ball with black.

The Japanese are a practical people and without much money to waste, yet they are willing to accept the very small increase in cost involved for the great improvement in realism on manœuvres, which is so very marked when the sound of machine gun fire can be reproduced.

I trust that these remarks will at least give food for consideration of the case for the Lewis gun from a point of view different from that taken by Colonel Keen.

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COMMUNICATIONS.

By Lieut.-Colonel Crofton, D.S.O., R.F.A.

In modern war communications are probably the most vital of all the entities that go to make for success.

In an article in this Journal for July 1923 on "The Evolution and Development of Signals" Captain Penney, M.C., says, "it is interesting to note the current controversy as to whether regimental signallers should or should not be a part of the R.C.S."

I am very strongly of opinion that regimental signallers should *not* be a part of the R.C.S.

Regimental signallers are necessary for the following reasons:—

(*a*) All branches of the service have certain technicalities which differ from those of other branches, *e.g.*, in the cavalry and artillery a signaller must be able to ride, in the infantry he need not; in the artillery a signaller must know the details of work of the battery staff, and also, if necessary, be able to keep touch between the battery leader and gun position officer (*vide* A.T.I. 165·5); this knowledge would not be necessary in other branches.

If signallers of the R.C.S. were to take over regimental communications they would have to spend time learning details of the various arms; this would interfere with their efficient training as signallers.

(*b*) A regimental signaller's job is one that requires considerable tactical training, and an eye for country, so that positions may be picked up quickly which are visible to his opposite number and at the same time hidden from the enemy. Constant practice is neces-

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sary. A signaller of the R.C.S. would have to do his turn at base jobs and during that time he would get out of practice at field work, and when posted to a fighting unit would, for a time at least, be more of an encumbrance than a help.

(*c*) A regimental signaller's job is essentially a dangerous one. It is an undoubted fact that some men are naturally braver than others. In war a C. O. picks out his signallers, not primarily for their ability to signal, but because they are men whom he knows to be staunch under fire and on whom he can absolutely rely; on these lines he builds up his reserve of signallers. Should casualties occur among the regimental signallers, and these be replaced by drafts from the R.C.S. the C.O. would not know whether these men were staunch or not. They may never have been under fire, and signal efficiency within the unit is more than likely to suffer.

(*d*) It is essential within a unit that officers and signallers should be used to working together. If drafts are to come from outside to replace casualties this is an impossibility and the efficiency of successful regimental communication is endangered.

All training, experiment and organization devised in peace time is preparation for war.

Warfare may be divided broadly into two categories, Stationary and Moving.

Of the former we had much experience in France in the years 1915—17. This experience taught us that visual signalling was practically an impossibility; when the telephone broke down orderlies had to be used.

The expenditure of life over repairing telephone wires was very great. In peace time we must seek for a means to eliminate this in future wars. We have it in the wireless telephone. Science must evolve a method by which all communications within 10

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miles of the front line can be carried on by radio telephony. Behind that the ordinary telegraph system can be used.

As regards stationary warfare, orderlies should provide the only alternative necessary when a satisfactory system of radio telephony is in use.

Moving warfare was not much in evidence in France, but Palestine, and perhaps even more our numerous campaigns of the past, such as South Africa, 1899—1902, afford us plenty of experience in that respect.

For our Army, training and organization to deal with "small wars" and moving warfare is really of the first importance.

The methods of communication at present in use are—

Telephony (cable),

Helio, lamp, shutter, flag—all Morse code, semaphore;

Wireless Telegraphy;

Wireless Telepony.

Every signaller, whether belonging to the Royal Corps of Signals or to a regimental unit has to know all but the last two of these methods.

This is a cumbersome system, the relic of many steps forward which have been made without erasing preliminary blunders.

The only methods essential at the present day are:—

Wireless Telegraphy,

Wireless Telephony,

Lamp (day and night),

Semaphore.

If that is granted much heavy fatigue and time is at once saved to all signallers. This will enable them to devote more time to perfecting themselves in the duties that remain.

At present in the Royal Artillery, brigade headquarters signallers consist of R. C. S. personnel. This innovation was brought in because it was thought that the regimental signaller might be unable to compete with, for example, exchanges and wireless in

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addition to his other work. In practice, the procedure was simple, brigade headquarters signalling personnel were transferred to the R. E.; this annoyed the personnel, especially if they were Territorials, and was bad "for esprit de corps."

As I have already tried to show this system is disastrous from the point of view of the unit, and with fewer methods in use it should not be necessary in future.

During the war the Royal Artillery suffered from having extremely important parts of their work carried out by men of other units.

(1) R. A. S. C. Drivers drove the tractors of the siege artillery ; this is apart from the subject of this paper, but it is interesting to note that the mistake of the system has been recognised and the R. G. A. now do their own driving.

(2) R. A. F. personnel manned the wireless installations at brigade and battery ends for communication with aircraft.

(3) R. E. personnel formed the signal section at R. A. brigade headquarters.

I consider that both these last two cases are as wrong as the first. Every artillery unit should be self-contained—no other branch or arm of the service has been thus interfered with.

Uniformity throughout the army is essential. It behoves us to be careful that the bad principle applied to the R. A. does not spread to the other arms.

The Morse code is a slow and cumbersome method of transmitting routine messages within units. There should be evolved a tactical code, on the lines of a glorified "artillery code." In this connection see "The Counter Raiders" in Blackwood's magazine of July 1923. By this means much valuable time would be saved in the field, and one could really hope to send a message more quickly by visual than by mounted orderly. At present for messages of normal length this is not the case when the distance be traversed is less than 2 miles of good going.

Thus we see that all signallers (R.C. S. and regimental alike) require to be proficient in :—

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Wireless Telegraphy (except for Cavalry and Infantry
Wireless Telephony,
Lamp,
Semaphore,
Tactical code (of their own branch of the service, R. C. S. to know all).

The degree of proficiency would, of course, be laid down by the General Staff, but should be higher for the R. C. S. than for the regimental signaller; at present it is unnecessarily high for the latter.

The next point to consider is how we can reduce the number of signallers within a unit. Here again we must invoke the aid of the scientists. Pair work must be eliminated—men must be provided with instruments which will enable them to work singly.

Machinery must economise Manpower.

What appears to be wanted in use is something on the line of certain instruments at present in use in the Post Office.

By the Wheatstone system telegraph lines are kept open; something of this nature combined with the Baudot system is required for radio-telephony to prevent "jamming".

The Creed machine, working in conjunction with the Wheatstone undertakes the transcription of messages; by these systems as many as eight tapes can be prepared at one time for transmission by one operator using a pneumatic punch.

The present radio-telephony apparatus is clumsy, complicated and bulky. We need one that will be simple, portable and unbreakable, for use in the field.

When the scientists produce the above for us we can at once effect an enormous saving in manpower.

The present establishment of signallers in a Brigade R. F. A. is:—

H. Q.....16,
Battery.....23,

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Under the system outlined above these numbers could safely be reduced to :—

H. Q.....12,

Battery.....12,

and give equal, and indeed increased, efficiency.

Similar reductions could be made in other branches of the service.

The above system would ensure economy within the unit in signalling personnel, in time spent in training and in actual transmission of messages, while retaining the present essential characteristics, particularly the personal element and that of regimental esprite de corps, without loss of either reserve, or efficiency.

The C.I.G.S. at the Staff Exercise held in 1922 drew special attention to the importance of wireless and to the need for progressive thought and training in this respect.

As long as we are dependent on our present obsolete instruments such as telephones and wire, so long must we retain our present expensive and dilatory system of communication.

These suggestions are merely put forward in the hope of starting a discussion from which there may emerge a practical working system for the future which will reduce loss of life and time and ensure efficient communications for the services whether operating by sea, land or air.

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"THE EVOLUTION OF SIGNALS."

(*Continued.*)

By Captain W. R. C. Penney, M.C., R.C.S.

In his article on "Communications" Colonel Crofton has, in the first place, put forward various reasons against the suggestion that the Royal Corps of Signals should take over regimental signallers and, secondly, has considered certain methods of signalling particularly in relation to scientific advance. He has shown how in his opinion such advance can simplify and increase the reliability of forward communications and at the same time economise in manpower.

With regard to the first, namely, the expansion of the Royal Corps of Signals to include provision for all forms of signal communications up to the front line, the following comments are offered on the points now raised against the proposal.

First and foremost, it must be realised that if ever the proposed expansion of the Royal Corps of Signals does take place it will perforce have to be on a very considerable scale, based on the vastly increased responsibility that would accrue and on the fresh set of conditions which would obtain in the new zone to be catered for. At the moment when "signalling" is undoubtedly in a process of transition, dependent to a large extent on peace time scientific development, I am not prepared to advocate the immediate adoption of a scheme whereby the Royal Corps of Signals would absorb all forms of regimental signalling. Policies are still undefined from the practical point of view and until it is possible to gauge the effects of modern progress, particularly with reference to concentration on wireless telephony and telegraphy with its consequent regrouping of personnel, it would do more harm than good to thrust a new organisation on to those whose hands are already filled with vast problems. The present position is sufficiently difficult for the Royal Corps of Signals,

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a new corps faced with a period of flux, when half fledged ideas and inventions of the Great War are demanding development and improvement despite lack of highly trained technical personnel and financial stringency. However, once a degree of stability sets in and we are again placed in a more or less fixed path with experience behind and controlled imagination and enterprise in front of us, with equipment and trained personnel available: when we can say, "Now we can do what you want and provide all you want," then we shall be able to return to the attack with an organisation evolved according to the requirements of the time.

My view is that, when that stage is reached the formation of one corps of suitable dimensions to man and maintain all communications will be the solution, and the only solution of the necessary problem, careful supervision and development concurrently in the technical and tactical sides of progress, in order to ensure the Time alone will show, and it may be that another war will be necessary to settle the question!

Colonel Crofton's points (*a*) and (*b*) can be considered together. He appears to visualise a situation in which the Royal Corps of Signals, with its existing categories of tradesmen, would take over forward communications, and to look on them in the same way as the remainder of the military system from the base forward for which they are now responsible. This is by no means a true conception of what would happen. The Royal Corps of Signals is now composed of men of some 10 or 12 different trades, the qualifications for each being calculated to ensure efficient performance of the work required by the conditions on the various sections of the military communication system. Thus, signal units which have to deal with "semi-forward" communications, *e.g.*, Infantry and Artillery Brigade Sections, will be found to consist chiefly of "Operators, Visual," who are specially trained to have an all-round knowledge of the different methods to be employed in their own sphere of action, *viz.*, visual signalling and simple line telephony and telegraphy. As you move back from smaller to larger formations increase takes place in the number of more technical tradesmen such as "operators' line" who are taught the use and care of the more complicated machines employed in their work, and

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a corresponding decrease in the "field" tradesmen, whose technical knowledge is not so developed but in whom a high standard of practical efficiency is demanded. At present there is only one class of "operator wireless," whether for one of the high powered G. H. Q. sets or for a small portable field set. It is undoubtedly for consideration whether this trade should not be subdivided, and with the increase in forward wireless it is quite possible that some such subdivision will become essential.

But, should the Royal Corps of Signals take over regimental signalling there is little doubt that a new trade or trades possessing the necessary qualifications would come into existence. Technicalities peculiar to the various arms of the service certainly exist perhaps particularly in the case of the Artillery, but to deal successfully with these does not appear to present an insoluble problem. Given a basically sound signalling training with, say, a "post-graduate" period in a R. A. wing, men intended for artillery communication duties should quickly acquire the necessary specialist knowledge.

Thus to take two of the qualifications mentioned by Colonel Crofton, tactical training and the development of an eye for country—both incidentally necessary in a certain degree to any soldier—would be specially catered for in the training of forward signallers and such men would on no account "take their turn at base jobs.' This never happens now. Considering the R. C. S. "operator visual" as an example, his training leaves him entirely unsuited for base work and consequently he is never employed there. How much more unlikely, therefore, would be the transfer from front to rear of a man specially trained for work forward even of that of the operator visual.

Points (*c*) and (*d*).—A regimental signaller's job is undoubtedly one that demands in a very high degree courage and devotion to duty but, standing on the record of the recent war, I cannot think that this can be held out as an argument against the R. C. S. taking over such jobs. From the nature of the work casualties are proportionately heavy and the question of supply in war of trained men is vital. The system if regimental supply, helped out by the Signal Service in which no provision had been made

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for such work, as practised in the Great War cannot be said to have been adequate or successful. Large centralised training facilities are necessary. After all, drafts have to come from outside the unit at some stage or other, and if a man is to be trained first as gunner during which time his Commanding Officer will get to know him, and then as a signaller, as apparently would be the case if reinforcements for the signallers are to come from within the unit, I suggest that time and man-power, both vital to the conduct of war, are being wasted. In war every man must have his own job to do and must stick to it. If he is to be a signaller all effort must be concentrated on making him a signaller—if a gunner on making him a gunner. It may be argued—it probably will be—that a successful artillery signaller must be a gunner first. Given a suitable training scheme, I should still maintain what I have just said—one thing or the other and not a moderate mixture of both.

The second part of Colonel Crofton's article can be divided into six main points :—

(1) It is essential to train for Moving Warfare as opposed to Stationary Warfare.

(2 There are too many methods of signalling.

(3) Uniformity throughout the Army is essential.

(4) Signal procedure is too complicated and should be replaced by a Tactical Code.

(5) Science must provide the means to economise in man-power.

(6) From discussion a practical policy may be evolved.

Point (1) need not be fully discussed here. Moving warfare is the refinement of war and is the basis from which development and expansion can take place if required for static warfare. Throughout the Great War, even in France where the war of position was developed in its highest intensity, every attempt to immobilise the signal service in any way was vigorously and successfully resisted, and results proved the justification of this policy time after time.

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(2) *Methods.*—The problem is to strike the happy mean between standardisation and concentration on the one hand and dissipation of effort in the attempt to provide the alternative means so necessary on many occasions on the other. Conditions and circumstances suitable for one method are not so for another but there is little doubt that we can and should gradually reduce the number of methods of signalling as modern means improve, and become thoroughly reliable.

Colonel Crofton's list of present day essentials is:—

Wireless telephony.
Radio telegraphy.
Lamp for day and night.
Semaphore.

I would recommend the retention of the heliograph for day work—at any rate in Eastern countries where it can frequently be used, and where the provision of battery power for lamps is a serious problem.

With regard to wireless and in particular, radio telephony, I shall refer to this again presently.

The question of semaphore *versus* morse would depend very largely on what sort of a tactical code could be evolved, but if the cry is for concentrated effort why teach semaphore when morse is in any case necessary for lamp, helio and wireless telegraphy? Morse can be seen at very much greater ranges than semaphore. Confusion appears to exist between "Morse Code" and "Signal Procedure" (see para. (4) below).

(3) *Uniformity.*—Colonel Crofton uses the need for uniformity as an argument in favour of every man connected in any way with artillery being an artillery man. It seems that the argument applies with much more force to the need of one organised body taking over the whole of a technical service from front to rear, *provided that the parent unit of the men concerned is situated in, works in, and knows the conditions of the same area as the formation or unit for which it is catering.*

(4) *Procedure.*—It appears that a considerable amount of misconception exists regarding procedure.

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It is difficult to go into details, as procedure is about to be altered by International Convention, but a few general remarks may help.

The object of procedure is to ensure accuracy, correct transmission and reception of messages and speed in obtaining corrections when necessary. Once two stations have established good communication with each other, delays on account of procedure, with efficient signallers, are negligible. Procedure is essential in the case of a chain of signal stations serving a number of units. When dealing with "domestic" traffic within a unit or in cases such as the transmission of fire orders, procedure as laid down in Signal Training is wholly unnecessary. Procedure is required to ensure uniformity and reliability when signallers of different arms or formations are working to each other. The degree to which procedure can be modified or dispensed with inside a unit is essentially the affair of the unit signalling officer. All he has to do is to see that in proper station work slackness, irregularities and unit peculiarities do not creep in. A signaller must always be ready to act as a mechanical transmitter within the unit without putting in any more extras than does a megaphone!

In any case, considering signal procedure as used in its correct place I believe there is room for simplification, *e.g*, in India there is no need for separate procedure for Indian and British signallers. However, as a new universal procedure for the use of Navy, Army and Air Force is about to appear there is little to be gained by discussing plans for amending the existing one at the moment.

(5) *Science.*—It is not difficult to say "Leave it to Science—Science must do this and must do that." Science undoubtedly will work wonders, but in peace time Science is heavily fettered. In the mean time great care must be taken to ensure that existing methods and equipment are maintained at the highest possible degree of efficiency. Science has been set a most difficult problem to solve, and in my remarks on wireless the extent and difficulties of this problem are touched on.

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(6) *Discussion.*—Discussion is undoubtedly invaluable, but in the course of it limitations must be realised, facts must be respected and we should learn to walk before we can run. Let the prophets prophesy, but give the scientists a chance in their grinding, never-ending work—work which may be inspired by visions of the future, but which is limited by hard material, scientific facts.

WIRELESS.

I commence with the difinite assumption that wireless telegraphy and telephony will provide the staple communication of the future.

The advantages of wireless are well known, and may be briefly summarised as follows :—

(1) By breaking away from lines and visual chains a commander can move his headquarters where he wishes, largely without risk of cutting himself off from his higher commander or his subordinate formations or units.

(2) Wireless provides the means of communication for detached or isolated parties or formations and piquets irrespective of the nature of the intervening country.

(*N.B.*—Within limits, as trees, mountains, etc., decrease the effective range of wireless sets.)

(3) The use of wireless means economy in man-power as only terminals have to be manned and maintained.

(4) It renders possible the protection of operators and avoids the necessity for maintenance of personnel outside terminals being exposed to fire.

(5) It means uniformity of method, and concentration of effort and training.

(6) It effects a reduction in equipment and consequently increase the mobility of the unit.

(7) Under certain conditions wireless provides increased traffic-dealing powers.

(8) Wireless makes it possible to effect touch with other units or formations without personal liaison.

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These points apply equally to wireless telephony and telegraphy. In addition, the former has the following advantages now possessed by line telephony over line telegraphy:—

(1) The voice provides the personal touch which in time engenders confidence.

(2) In speech explanations, descriptions, etc., can be given in accordance with "the other man's" point of view and state of mind.

(3) Speech is almost essential for fire control and the rapid description of targets.

It is frequently alleged as a further advantage that a radio telephony installation does not require trained Morse operators to work it. Experience has proved that this is a fallacy and that operators of high technical skill are necessary. The question of Morse training is a minor one.

The above are the main advantages of a wireless system.

Its disadvantages are not always fully realised and it is necessary to enlarge on the difficulties connected with the development of service wireless in order to indicate the lines on which progress is required and to explain a little of the problem which the "lay" mind, correctly but not always sympathetically, has set the technical advisers and scientists.

(*a*) *Training.*—Wireless at present requires very special technical training and demands a high degree of skill in handling. There is little "set" adjustment in wireless working and nothing that is fool-proof. Operators and mechanics alike are affected. The only really efficient wireless operators in existence are the commercial and naval operators who are continuously employed on the same work.

Simplification is essential and no doubt will come in time.

(*b*) *Lack of secrecy.*—It is this very lack of secrecy that makes present day broadcasting possible. Anyone with a suitable instrument tuned to the same "pitch" as the transmitter can hear all that that transmitter has to say. Hence the necessity for cipher with its complications and delays. Who is to carry

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out enciphering and deciphering and who is to be responsible for deciding what may be sent "en clair" and what must be in cipher are two of the many questions that are involved in the use of cipher.

(*c*) *Wireless is Directional.*—Although, as will be shown in the next paragraph with reference to interference the fact that the greatest effect of wireless waves is in a definite direction can be put to advantageous use, the same fact introduces a tactical disadvantage. As the maximum strength of radiation of wireless waves from any set occurs in one line, it is obviously possible by receiving from two suitably placed stations to obtain two compass bearings on a transmitting set and thus to plot its position. Obviously the presence of a wireless set indicates the existence of a unit or formation headquarters or other important locality such as an observation post. Also increased wireless actively in any area means increased forces in that area—information invaluable to enemy intelligence.

(*d*) *Interference.*—This may be divided into three:—

(*i*) Jamming by the enemy.

(*ii*) Interference from friendly stations.

(*iii*) Interference from atmospheric disturbances.

(*i*) A good example of this occurred recently in the occupied area of the Ruhr. Owing to all their normal communication facilities being destroyed, the Germans commenced to broadcast anti-French propaganda by wireless from unoccupied Germany into the Ruhr. This was effectively silenced by the French who, by using jamming stations rendered reception of the propaganda impossible. Why should this not be done in war?

(*ii*) If the use of wireless in the Army is to become universal the number of sets in any given area will reach a large figure. Interference will inevitably result science until produces wireless so directional that no set can receive it without a carefully oriented aerial, or so susceptible to tuning that a metre's difference in wave length will destroy reception.

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(*N. B.*—Such advances would again increase the practical difficulties of the operating staff.)

An example of "friendly" interference occurred recently in the course of the Trans Atlantic Broadcasting Tests. When the American stations were listening to the programme from England their reception was intermittently spoilt by smaller but nearer broadcasting stations in America carrying on their normal transmission.

(*iii*) Wireless waves are very liable to adverse effect from atmospheric disturbances, *e.g.*, before or during a thunderstorm reception is impossible; greater ranges can be obtained during the hours of darkness than in the light; during the hot weather in Eastern countries wirelss working is frequently impossible, etc., etc.

Devices for the protection of sets from the atmosphere are therefore required. They are being developed but have only reached the elementary stage.

(*e*) *Equipment.*—Instruments at present suffer from the following disadvantages:—

(1) They are delicate and bulky.

(2) In the case of forward sets a carrying party 3 or 4 strong is necessary. If one man is killed the whole set is rendered useless and the other men's immediate value ceases.

(3) Wireless working requires electrical power. The provision of this power is a difficult problem having regard to portability and maintenance. Oil and petrol engines and large batteries of accumulators are suitable for permanent or semi-permanent installations but for forward sets they are eminently unsuitable.

The introduction of the thermionic valve has gone far towards dealing with this difficulty, but we are still a long way from overcoming it.

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These points apply to wireless in general. The following additional disadvantages belong to radio telephony alone:—

(*a*) The range of a telephony set of given power is only one-third of a telegraphy set of the same power.

(*b*) Telephony is even less secret than telegraphy and the use of cipher is impossible.

(*c*) Radio telephony is less "tunable" than telegraphy, *i.e.*, it overlaps its given wavelength and consequently sets up interference and reduces the number of sets that can be employed in any given area.

(*d*) The belief that the use of radio telephony obviates the necessity for trained operators is a fallacy.

(*e*) Radio telephony working is "one-way" only, and is therefore slow. Each terminal has to talk in turn and cannot interrupt the other. Thus one of the main advantages of speech over the written word is largely lost.

(*f*) Telegraphy is more accurate and reliable.

(*g*) Delays is telephony are caused by the unfamiliarity of words used by one end—say an officer observer in an aeroplane to the receiving operator on the ground—a private soldier. Delays also occur when at one end there is a man of Devon and at the other one from Glasgow!

It will thus be understood that while a wireless system possesses undoubted advantages of far reaching consequence there are many practical difficulties to be faced.

It is only by displaying and discussing these difficulties that solutions are likely to be found. We hope that such discussion and enterprise may evolve the means to lift wireless out of the rut wherein it lies at present, a not altogether credited auxiliary means of communication.

In the mean time let it not be forgotten that the efficiency of, an proficiency in, the use of existing means must not be allowed to decay through an over trustful confidence in the future.

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A REGIMENTAL SOCIETY.

By Shilmalier.

Of late years many a Unit Commander of the Indian Army has racked his brain over the subject of war memorials. It is a difficult question and has been solved in a diversity of ways—memorial brasses sculpture, endowed beds in hospitals, scholarships and so on almost "ad infinitum". In the writer's battalion, after much fruitless discussion, it was decided that the memorial should take the form of a Regimental Society, which would not only commemorate the part which it had taken in the great war, but would also strengthen the ties which existed between past and present members of the Battalion, and consolidate 'esprit de corps' and loyalty on a broader and more permanent basis. Note that stress is laid on 'esprit de corps' and loyalty, as these two features are of the essence of the society. It is possible that the following account of the society's work and organisation will be of interest to other Unit Commanders and their officers.

To begin with, the objects of this society are three :—

(1) To be a memorial to officers and men of the Battalion who fell in the great war.

(2) To strengthen the links between past and present members of the Battalion.

(3) To assist past members of the Battalion, or the families of past members of the Battalion, who have died, when in distressed circumstances.

All ranks of the Battalion are 'ipso facto,' members of the society, and, in the ordinary course of events, remain so throughout their lives. Disgraceful conduct is the sole disqualification.

A fund is maintained in connection with the work of the society, to which all ranks subscribe in varying amounts according to their pay. The subscription for a sepoy is one anna a month.

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Past members of the Battalion are not asked to subscribe. The income of this fund amounts to about Rs. 70 a month or Rs. 800 a year, a small amount it is true, but it is thought better to make a modest start. If the demands of charity call for a bigger fund there is no doubt that there will be a cheerful response. The sepoy is careful to a fault, in the expenditure of his money but, where charity is concerned, he is ever a glad giver. Judging by past experience it is not anticipated that there will be many serious appeals for charitable assistance except, perhaps, in years of drought, and the fund as it stands, will probably suffice. It will also have to meet certain administrative expenses but these are as yet an unknown quantity and can be regulated according to the means of the society.

A register is maintained which, besides giving full particulars of every member of the Battalion, also shows what land or other property there is in his family from which he may expect to derive a full or partial livelihood. The knowledge thus possessed of a man's circumstances will be a safeguard against unreasonable appeals.

The work of the society is carried out by a committee of which the Commandant is president. Other members are the Second-in-Command, the Adjutant, the Subadar-Major and Indian Officers representative of each class of which the Battalion is composed. The business of the committee is to meet from time to time, discuss projects for the betterment of the society, and adjudicate on claims which will have been investigated previously by the society's local representatives.

These local representatives are mostly retired Indian Officers of the Battalion, who have volunteered to represent the society at their homes. As far as possible an old Indian Officer has been selected in every Tahsil from which the Battalion draws recruits whose business it is, if he is called on to do so, to act as a local claims investigating officer. A shrewd Indian Officer will be able to form a useful opinion as to the merits of any individual case without putting himself to much inconvenience. This Indian Officer also acts as a connecting link with the Battalion. He is equally in a position to supply news to old soldiers of their serving comrades, or to send news to the Battalion, of its past members. The society supplies him

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with a quarterly news sheet giving all the latest news of the Battalion so that old soldiers wishing to hear the latest news, may do so by applying to him. The news sheet is supplied to all old Indian Officers and also to selected N.-C. Os. and men provided they express a wish to have it. The question of expense prevents a larger circulation but an endeavour is being made to place news within the reach of every old soldier. Possibly, in time, the society will have a representative in each 'Zail' of its recruiting area. The news sheet ls published in Roman Urdu.

It is proposed to supply each local representative with a copy of the register sheet of each old soldier of the Battalion who is a resident in his area. He will then be in possession of the fullest information regarding his own particular flock. No serious burden of work will be thrown on his shoulders. As already mentioned previous experience tends to show that appeals for charity will not be many. Poverty is common among the agricultural classes from which the sepoy of the Punjab battalions is recruited but there is also a fine pride which scorns the dole and so it is probable that the society's local representative will be called upon but rarely to investigate hard cases. So far as the society is concerned his main function will be to receive and pass on news, an occupation dear to the hearts of those of his class.

It is hoped to arrange for a conference every year or two, at Battalion headquarters, of local representatives, when progress will be reviewed and plans laid for the future. But the main function of these conferences will be to keep alive that close touch between past and present which can alone enable the society to flourish. The news sheets will do much but the conferences will do still more. Expense is a limiting factor. However the number of local representatives is small and, in the case of the writer's Battalion, does not exceed twenty or twenty-five, the bulk of the men being drawn from roughly that number of Tahsils. So, provided that the Battalion is serving in the Punjab, the expense of a conference will not be great and other regimental funds will help in case of need.

The society, as described above, stands in much the same relation to the Battalion, as does an "Old Boy's" society to a

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British public school. It is possible that other Indian Units have such societies already but they are certainly few and far between. It can hardly be disputed that such a society is of value, for it is common knowledge that strenuous attempts have been made of years to draw pensioners and old soldiers in general, into the whirlpool of the seditionist movement sometimes with success, and it is hoped that the ties of the Regimental Society, slight though they may be, will help to keep the ex-sepoy from trouble of that kind. Hitherto, the old soldier, on retirement into private life, has had little, if any, chance of keeping in touch with his serving comrades. This through no fault of his, for the Indian soldier has a great sense of 'esprit de corps' and nothing pleases him more than to foregather with a chance—met sahib or old comrade and talk over times gone by. The society aims at stimulating his interest by the issue of the news sheet and, further than this, to interest his family as well. This will be done by publishing news of general interest and by holding prize competitions of a simple nature in which all can join.

It may be argued whether this is worth while, whether the building up and consolidating of this small brotherhood will produce results which justify a considerable expenditure of time and patience, not to mention money. What is the object of it all? Who stands to benefit?

Briefly, it is claimed that the Battalion will be the gainer by an increased and vigorous 'esprit de corps' which will enable it and its community to flourish equally in bad times as in good. Also, that the State will benefit by a movement which tends to produce a better citizen. Indeed it is hardly necessary to argue that there is room for societies of the kind. Any movement that helps to confirm the innate loyalty of the fighting classes is something to the good. During recent stormy years a series of happy windfalls—free rations, free clothing, an increase of pay, enhanced pensions, deferred pay and much more besides—has deterred the Indian soldier from looking on the dark side of the picture. This pleasant state of affairs may not persist. The future is likely to be more barren than the present and it is not to be expected that

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the insidious mischief maker of India will pass that fact in silence. The rapid spread of education in the Indian Army is opening the sepoy's eyes to a great deal besides what is good for him. His loyalty may be exposed to severer tests in the future than it has known in the past. If this Regimental Society can do anything to help him and his, to weather coming storms, it will have earned a right to permanence.

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REVIEWS

IN THE INDIAN CORPS FRONT IN FRANCE 1914—1915.

A Map showing the Trenches occupied by the Indian Corps in France 1914-15, compiled by Major W. P. Pakenham-Walsh, R.E. (late 20th Coy., 3rd (Royal Bombay) Sappers and Miners) from the Regimental Records of the Connaught Rangers, 3rd Royal Bombay Sappers and Miners, 15th Ludhiana Sikhs, 34th Royal Sikh Pioneers, 39th Royal Garhwal Rifles, 47th Duke of Connaught's Own Sikhs, 107th Pioneers and 129th Duke of Connaught's Own Baluchis.

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WORLD
THE ~~WILD~~ CRISIS 1915,

(By Winston Churchill)

This book, which deals very largely with the Dardanelles Campaign, might with justice have borne the title "How *not* to wage war". The author, who was the driving force behind both the Naval and Military attempts in the early phases of the campaign lays bare a terrible picture of indecision, procrastination, muddled thinking and lack of co-operation. All the vices that lead to disaster in war were rampant amongst most of those who initiated and directed the campaign. Most of the great departments or personalities concerned appear in the worst possible light after a careful perusal of the evidence collected in this volume.

We are shown an unwieldy Cabinet constituted for the most part of peace loving Radicals leavened with a few great military and naval experts, being gradually drawn into a campaign, the extent, difficulties, and responsibilities of which they had only the vaguest idea; the Foreign Office steering a dubious and vacillating course amidst the fierce jealousies and mutual animosities that paralysed the Allies' political policy; Mr. Churchill at the Admiralty using his great driving force and influence to try to make this expedition the decisive theatre of war for the time being for the British nations; Lord Fisher, enthusiastic at first, then half-hearted and obstructive; Lord Kitchener finding the greatest difficulty in adjusting the rival claims of the campaigns in France and the Dardanelles with the resources *at his command; Sir Ian Hamilton through no fault of his own starting out for a campaign of the greatest complexity* with an inadequate administrative staff and with one out of date map.

It is reasonably clear from the mass of evidence collected by Mr. Churchill that the Gallipoli Peninsula could have been

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*NOTE.—According to Brigadier-General Aspinall.

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captured with certainty early in 1915 by a well organised combined naval and military attack; the military forces required for success would have been far less than those ultimately frittered away in disastrous piecemeal attacks. It is also clear from evidence that has come to light since the armistice that had the naval attack of March 18th been continued with determination for a few more days, a portion of the Fleet could have penetrated into the sea of Marmora. The Turks at that time were nearing the end of their tether as regards heavy gun ammunition and after a few more days' ammunition expenditure could have done nothing to prevent the methodical mine sweeping of the straits and the passage of the Fleet (into the Sea of Marmora). Whether this operation by the Fleet alone would have had the far reaching results that Mr. Churchill rather dogmatically claims for it must for ever remain a matter of conjecture. But there is no doubt that a successful combined naval and military operation would have had a powerful repercussion throughout Europe and the East. The Fleet in the Sea of Marmora with the Turks still holding all the positions dominating the Straits might have found itself in a position of some embarrassment; but the Fleet in the Sea of Marmora with the Gallipoli Peninsula securely held by a British force would undoutedly have been an all powerful weapon for dominating Turkey, influencing the Balkans, and bringing moral and material encouragement to Russia.

These two excellent chances of limited and unlimited success respectively were never taken; vacillation by the Cabinet, administrative disorganisation at the War Office, tactical ineptitude by certain leaders on the spot, and the fortunes of war, led the ill-fated expedition from one disaster to another. The two great principles of speed and concentration were utterly disregarded; as Mr. Churchill puts it. "We have always sent two-thirds of what was necessary a month too late."

The fundamental evils that underlay this melancholy chapter in the history of the war were two-fold, and can be readily deduced from a study of this work. The first was a badly constituted and cumbersome War Cabinet. From its very size, its constitution, and the quality of a portion of its personnel, it was incapable of

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producing a clear cut plan or policy, or supporting with the necessary determination such projects as it eventually drifted into. To quote Mr. Churchill "Power was widely disseminated amongst the many important personages who in this period formed the governing instrument. Knowledge was very unequally shared.'

The second evil was that in 1915, the War Office was in a state of considerable disorganisation and quite incapable of organising efficiently and scientifically a complicated overseas campaign at short notice. The extremely efficient body of staff officers who during the years previous to the War completed that model of organisation, the original Expeditionary Force, had left England almost in a body at the outbreak of the War to take up important positions with the Expeditionary Force in France. One can sympathise with this keenness to march to the sound of the guns, but the results at the War Office were disastrous. The officers collected to replace them mostly came from the retired list. The dislocation caused by this sudden change of personnel would alone have been sufficient to cause a considerable loss of efficiency; the fact that many of the officers now called on to fill important posts were, owing to age or other causes quite unsuited to bear the terrible strain cast on them, made things considerably worse. No one apparently had foreseen that the strain which would certainly fall on the War Office in the event of an European War would be so crushing that only the most vigorous and most carefully trained brains in the Army could successfully sustain it. Presumably our plans rested on the dogma that the war would be decided finally one way or another in a short sharp campaign across the Channel. During the few months necessary for a decision the War Office could be left to look after itself. The possibility of a second overseas Expeditionary Force on a large scale does not seem to have had a part in the pre-war philosophy of those in power.

It is sincerely to be hoped that the terrible tale of muddle and ineptitude unfolded in this and similar intimate war histories will never be repeated. If at some future date Britain becomes involved in another great war, the following steps taken before the outset of hostilities should minimise the risk of recurrence.

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(1) The direction of the politics and strategy of the campaign should be placed in the hands of a small War Council consisting of the strongest and most experienced political, naval and military leaders in the country.

(2) The War Office should be strengthened rather than weakened. All the biggest jobs and a large proportion of the lesser ones should be held by experienced and trained staff officers.

(3) No campaign should be commenced until every aspect has been carefully considered by the War Office and the Admiralty, and until the troops, material and transport necessary to give it a fair chance of success have been collected.

As Mr. Churchill justly says "The soldiers who are ordered to their deaths have a right to a plan, as well as a cause." He might have added they also have a right to an efficient staff organisation to carry out the plans.

Mr. Churchill devotes other chapters to the origin of Tanks and Smoke, the action of the Dogger Bank, and The First Defeat of the U Boats. There is no need to deal with these in detail, but every chapter is well worth reading. Mr Churchill's style is inclined to become florid at times, but he writes with great power and dramatic effect, and the book never loses interest.

Every officer should read this book both for pleasure and profit.

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JUTLAND : A PLEA FOR A NAVAL GENERAL STAFF.

By Major A. C. B. Alexander, O.B.E. (Hugh Rees, Ltd., 5 and 7 Regent Street, S. W. I. 1923.)

In this pamphlet of 62 pages, the author gives an interesting survey of the course of events leading up to, and during the battle of Jutland, and the reasons for the failure to secure a decisive victory over the High Seas Fleet. From this narrative he deduces that "the supreme lesson we may draw from the operations of Jutland is that modern war demands a General Staff", and explains that "a General Staff System—aims, at the attainment of settled doctrines and settled principles without further consciousness or reflection—the main object to be attained is the elimination of that hesitating and tentative action that is still so imperfect as to be actively self-conscious."—

As a general principle this view will no doubt be accepted, and in support of the argument it will be agreed that both at the Admiralty and in the Fleet, in matters of policy and command respectively decisions and actions have apparently depended very greatly on the individuality of those in authority, and that anything in the nature of a "staff doctrine" has been conspicuous by its absence. At the same time the author does not investigate the lesson in detail, and therefore does not dwell on some of the peculiar difficulties involved in a naval action, and how exactly these are to be overcome by a naval general staff.

In an appendix the author refers to Lord Fisher's plan for an attack on the Baltic, and the absence of co-ordinated plans for utilising our combined naval and military resources to the best advantage.

In this connection it is interesting to study the Report of the National and Imperial Defence Committee (1923), with special reference to the co-ordination of the defence forces. It remains to be seen to what extent these recommendations, if acted upon, will make good the errors of the past.

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THE FRIENDS OF ENGLAND.

By Sir Ian Hamilton (Allen and Unwin, London.)

This book is a reproduction of a series of lectures delivered by Sir Ian Hamilton to the members of the British Legion, before whom, to quote the author's own words, "the contents of his brain have been laid without in any way cooking them up or setting garnishes around them".

The writer, in laying bare the contents of his brain, conveys the impression of being obsessed by a number of fixed ideas, which almost regardless of the subject under discussion, are given prominence again and again to an extent which suggests propaganda.

It is frequently asserted, or implied, that our alliance with France (a fortuitous child of misfortune) has outlived its usefulness. In this connection quotations from the text such as the following speak for themselves. "Prosperity at home and peace abroad depend on our escape from the 'entente' and Reparations Commission."—"The French idea of joint action is that the other parties should subscribe to the French Policy"—"We are surrounded by so-called friends who are sometimes enemies, by late enemies who are usually friends."

"The (British) Army of the Rhine has made more friends for England than exist in France, Italy and Belgium."

In discovering so many disadvantages in an alliance with France, Sir Ian Hamilton is driven by the force of logic to find corresponding advantages in a "rapprochement" with Germany based on the blood-ties of Great Britain with the Northern Peoples of Europe "whose mild yet positive friendliness hold out possibilities of gaining the friendship of both the Germans and the Russians."

A just tribute is paid to the Russians of the old regime, who when urged by the British and the French to relieve the pressure

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on the Western Front, made great sacrifices at the beginning of the war in starting the "Steam Roller" (a term beloved of the press and said to have been invented by Colonel Repington) long before they had sufficient fuel to ensure its action for more than isolated efforts.

The Russian point of view, that our efforts to help Russia, in Gallipoli were negatived by our premature and unnecessary retirement from the Peninsula, is worthy of consideration, as a factor which tends to make Britain unpopular--in Russia but indefensible in the light of a more just appreciation of the strategy of the Great War.

It is held that Bolshevism can be killed by recognition and that the "handful of Hebrews who slave-drive a scratch lot of Tartars" will be discredited thereby.

Britain, it is contended, has made too many sacrifices to America, notably in the breaking off of the Anglo-Japanese Alliance in the voluntary reduction of our fleet and in the funding of our debt to America. The only constructive suggestion made concerning our debt to America is, that we should have asked for its cancellation regardless of the dishonour of coming under a third category—that of asking to be "let off" Russia is described as unwilling both to recognise and to pay her debts, France as willing to recognise but unwilling to pay hers.

There are several chapters devoted entirely to the Author's experiences in Russia and Germany, where, in pre-war days he attended manoeuvres. Without criticising the valued comments of a famous soldier the reader is wearied by a onesided attack on the use of Cavalry persistently reiterated in spite of the achievements of our mounted forces, in which the author has perhaps forgotten Sir William Robertson, Sir John French, Sir Douglas Haig and Lord Allenby received their early training, and in spite of the atmosphere of "The Cavalry Spirit", rose to the highest positions in our Army and even had the audacity to use or to advocate the use of cavalry in a modern war.

The implication that the General Staff before the War was unenterprising and the statement that there was no better Infantry

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in Europe than the Bulgar Infantry "Save perhaps the Highland Scots and Serbs" fail to carry conviction.

The reader is somewhat perplexed at the order in which the chapters of the book have been arranged and might reasonably expect to find at the beginning, instead of in the middle, descriptions of the pre-war armies of Continental powers.

The book is useful to those, whom it may influence to search for more balanced and sober opinions on the mass of subjects treated in a space wholly inadequate to permit of their discussion.

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THE QUEEN'S OWN ROYAL WEST KENT REGIMENT 1914-1919.

(By C. T. Atkinson. Simpkin, Marshall, Hamilton Kent & Co. 7s. 6d.)

The history of the war services of the Queen's Own Royal West Kent Regiment during the Great War is told with absorbing interest by Captain C. T. Atkinson.

During the War 22 Battalions of the Queen's Own served at home and abroad and the Regiment was represented on almost every front—on the Western front, at Gallipoli, in Palestine, in Italy, in Mesopotamia and on the N.-W. Frontier of India.

The 1st battalion formed part of the 5th Division, and it is with the doings of this battalion that the first few chapters are mainly concerned.

With this battalion one follows the fortunes of the original Expeditionary Force at Mons, at Le Cateau and throughout the long retreat to the S. E. of Paris. Then, following the defeat of von Kluck's right wing on the Ourcq, back again across the Marne and the Aisne and up to Ypres.

Here comes the beginning of the struggle in the Salient, included in which was the splendid assault on Hill 60 by two companies of the 1st battalion on the 17th April 1915.

The 1st battalion was soon followed to France by the first three service battalions, the 6th, 7th and 8th, the latter arriving just in time to take part in the unlucky battle of Loos, where in its first engagement it suffered casualties amounting to some 23 Officers and 550 other ranks.

Then follows the advance from Loos to the Somme, the battles of the Somme, Arras and Messines, the fierce fighting for Ypres, the great surprise attack and the piercing of the Hindenburg line at Cambrai, followed in March 1918 by the great effort of the Germans to wrest victory from the Allies, the fierce struggle for

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Amiens and finally on the 8th August 1918, "the black day of the War for the Germans", the turning of the tide, followed by the breaking of the Hindenburg line and the decisive blows which finally brought victory to the Allied cause.

Throughout the whole of this period can be traced the indomitable spirit with which all battalions of the Queen's Own were imbued and which enable them to overcome all difficulties and to prove themselves, as ever "Invicta".

Other chapters deal with the operations in Italy, in Mesopotamia, in Gallipoli, in Palestine and on the N. W. Frontier of India, on all of which fronts the honour of the Regiment was worthily upheld

There are 5 appendices, including a Roll of Honour, a list of recipients of Honours, Decorations and Mentions in dispatches.

There are also numerous sketches and diagrams; which are of great assistance in explaining the actions and movements referred to in the text.

In addition there are many photographs of officers and others, who specially distinguished themselves.

The work entailed in producing a volume of this nature is enormous and Captain Atkinson is to be congratulated on the successful manner in which he has accomplished his task.

Altogether it gives a faithful representation of the glorious part played by the Queen's Own in the greatest of all wars, which will be read with especial interest by all past and present members of this famous regiment.

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PIONEERS ON FOUR FRONTS.

(*By Edwin Haward; C. & M. Gazette Press.*)

This little book is a well written account of the doings and vicissitudes of the 107th Pioneers in France, Mesopotamia, East Persia and on the Indian Frontier, during and after the Great War.

While one is weary of the nauseating war novel, and reading official histories is rather like work, a book of this kind is always welcome.

Being a regimental record there is necessarily a good deal of domestic detail, of special interest only to those concerned; but the author is to be congratulated on producing a very readable book, interesing and instructive to the general reader.

He gives us a picture of modern war at first hand, from the regimental point of view; the record of "the toad under the harrow.'

Allowing for a little excusable self-laudation, the book will help the reader to realise and appreciate the heroic effort put up by our Indian troops in helping to win the War; to sympathise with them in their hardships and difficulties in victory and defeat, and to understand that nothing is too good for our fighting troops.

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AERONAUTICAL SCIENCE.

By Hart Laidler, (Oxford University Press, Bombay).

In presenting this book the authors remark that it is intended to fill a place intermediate between popular works for the general public and the more severe type of publication which calls for considerable knowledge of mechanics and mathematical analysis on the part of the reader. While we are unable to review this work in detail we are of the belief that the authors have failed in their object: they appear to us to have inclined more towards the scientific class of work without suceeding in incorporating the mass of matter of exceptional interest, even to amateur students of aeronautics, which will be found in such works as "Applied Aerodynamics" by Thomson.

We are frankly amazed to learn that this book is primarily written for the use of aircraft apprentices of the Royal Air Force. If the average mechanic can absorb a book in which trigonometry and the notation of the calculus has to be introduced, his standard of education must be higher than that of the majority of officers under whom he will serve. A "tradesman" appears to us to need just that elementary knowledge of the theory of his craft as will enable him to carry out his practical work with interest and intelligence. We cannot think that a mechanic will have any opportunity of applying the complicated formulae included in this work.

If this book were pitched on a lower and more practical plane and at least one-third of it omitted, it should form a useful work to place in the hands of the average pilot or aircraftsman, and should form a valuable supplement to official training publications. The matter appears to us to be sound, and the printing, paper, binding and indexing exceptionally good.

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ARMY ORGNIZATION AND ADMINISTRATION.

(*By "An officer of the Line," Sifton, Praed & Co., London.*)

This book should prove of undoubted value to all officers, especially perhaps to those who "in the narrower sense" (Author's preface) are studying for promotion or Staff College examinations.

It is certainly a bold venture that the Author has undertaken: in a work of 119 pages he has endeavoured to cover the enormous field outlined in the chapter headings of the Contents.

It is made clear in the preface that an outline only is attempted, but it is suggested that the preface should have formed Chapter 1, in order more surely to emphasise the very general nature of the book. Prefaces as such, so often remain unread. This point will be clear if it is noted that Chapter 8 for instance dismisses the very big subject of Mobilisation in barely four pages (about 800 words).

The author says in his preface that "those officers who wish to understand the subject thoroughly will have to devote considerable time to hard thinking."

This is true, but those same officers will have to devote considerably more time to reading and "delving" before they can start on their thinking. The value of the book would have been greatly enhanced if the author had appeneded references to show readers where they might continue the study of the subjects outlined.

Although written presumably for officers of the British Service at home, it is disappointing to find that the intricate and difficult problem of organisation and administration presented by India are passed over in a chapter of 6½ pages, and in this space no real problems are touched on at all, nor are any of the difficulties set out.

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As regards statistics it would perhaps have been as well if in the chapters on foreign armies and the forces of the Dominions the author had inserted the dates on which his facts are based. These details are constantly changing and the reader requires a basis from which to work.

It is good to notice the emphasis laid all through on the problems presented by finance in peace organisation. Had he elected to touch on India more thoroughly this point would have been fully exemplified.

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ELEMENTARY IMPERIAL MILITARY GEOGRAPHY.

"GENERAL CHARACTERISTICS OF THE EMPIRE IN RELATION TO DEFENCE."

By Captain D. H. Cole, M.B.E., Army Educational Corps.
(London: Sifton Praed & Co., 67, St. James' Street, 1924.)

As the author modestly states in the preface, this excellent book is an elementary study "and its object will have been fully attained if it enables readers to follow intelligently some of the current Imperial problems, and to seek for more detailed information from specialist works." Let us say at once that it more than achieves this object, and that its timely appearance will be greatly appreciated by all those who require an up-to-date book on this most important subject.

The publishers are to be congratulated on this addition to their list of publications. One or two small errors in names occur in the chapter on the Near East, *e.g.*, Dera Ghazni Khan *for* Dera Ghazi Khan, Doran *for* Dorah, Bambian *for* Bamian. These will no doubt be corrected when a further edition is required.

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VETERINARY NOTES.

By Major R. S. Timmis, D.S.O., (Forster Groom & Co., London.)

This popular little work contains a lot of information of interest to horse owners for whom it is intended.

A sound knowledge of animal management and nursing in health and disease is of greater importance to the layman than the application of remedies. The hypodermic, intra-venous and intrachial administration of drugs, etc., such as strychnine, arecoliene, the application of mallein and tuberculin and the use of instruments such as trocars, etc., cannot be recommended except by those professionally trained in their use. Otherwise, the object of the book, *viz.*, the welfare of the horse may easily be defeated. Some of the statements, *e.g.*, that roaring is the result of bad horsemanship, are not those commonly accepted.

The plates of types of horses are particularly good.

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THE FIGHTING FORCES. A QUARTERLY FOR THE ROYAL NAVY, ARMY AND ROYAL AIR FORCE.

(*Edited by Lt.-col. F.E. Whitton, C.M.G., Vol. 1., No. 1, March 1924. Gale and Polden, 5s.*)

We cordially welcome the appearance of this new magazine dealing with the services, in spite of the fact that it adds further to the already considerable amount of literature to be devoured. For, while it deals with more serious professional subjects of general interest to the services, it also contains articles in lighter vein, which afford a welcome relief to the more austere periodicals.

Through the medium of contributions of the lighter type from members of the services in various part of the world much useful and up to date information will no doubt be made available, more especially for the benefit of those going abroad.

The magazine is an excellent production, with very good illustrations.

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WONDERS OF THE HIMALAYA.

By Sir Francis Younghusband, K.C.S.I., K.C.I.E.,
(Messrs. John Murray.)

This, as the author tells us in his preface, is a book written for men, but which, he hopes, boys will read. It is, in fact, intended to be a popular account of Sir Francis' many journeys and explorations in the Himalaya when he was a very young officer. Naturally, therefore, as a serious book of travel it suffers from the defects inherent in all popular works: it is not sufficiently detailed and technical to enlighten others who seek to follow in the author's footsteps.

We fear that in its lighter aspect the book may no less miss its mark. To the initiated, the courage and perseverance with which the author battled with Nature in an unknown land will be apparent enough, and his descriptions of the mountains he loves so well will often strike a chord of sympathy. But boys may find the account dull reading. Boys and men, both, may well ask why the author tells us so little of the folk-lore and history of the lands he visited; why he so completely ignores the birds and beasts and flowers. We hear next to nothing of these; though we hear much of the author's innermost thoughts and of his self-administered religious homilies. A sense of humour is a blessed thing in an author—whether he writes for men or boys.

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Report of the Committee on Administration and of Accounting for Army Expenditure.

(Cmd. No. 2073. H. M. stationery office 1924. 9d.)

This report deals with the system of Army accounting now in force at home and makes proposals for its improvement. Briefly, it is emphasised that a modern system of accounting should be an integral part of administration and this must be accompanied by decentralisation down to units.

The introduction of cost accounting in 1919 was a step in the right direction but failed in its object since it was not combined with that increased administrative responsibilty which alone can interest unit commanders in its working.

Hitherto army expenditure has been accounted for under departmental headings or "subjects" of expenditure, whereas it is held that a more rational system would be under unit headings or "objects" of expenditure. This opens up a new aspect of the supplying services as purveyors to, rather than controllers of, the material needs of the army. The unit commander, with whom responsilibty for not exceeding his budget would thus rest, would consequently have to retain in his control decisions on many questions of expenditure.

It is held that such a procedure would do away with many complicated regulations, and save time wasted in correspondence and reference of trivial matters to higher authority for decision. It is pointed out moreover that by this means the younger generation of officers will receive invaluable training for the higher posts they may be called on to fill in the future Decen tralisation is thus to be carried out to the extent that all accounting work for units will be done by unit accountants.

A welcome recommendation is that which makes the head of the military accounts organisation directly responsible to the

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Adjutant-General, in peace and in war. The Committee very properly points out that without real control little enthusiasm can be expected from officers, and that the control of the Corps of Military Accountants by the Finance Department of the War Office has hitherto provoked hostility to the 1919 system.

All who desire progress in army administration will await with much interest the action taken by the Army Council on the report, and the adoption of the recommendations in the army in India.

We commend the report to the notice of all officers, more especially those studying for Staff College and other examinations.

The agents in India are :—

Messrs. Thacker, Spink & Co, Calcutta and Simla.

Messrs. Thacker & Co, Bombay.

Messrs. Higginbothams Ltd., Madras, Bangalore.

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3. A Territorial Division and the Hindenburg Line, by an Eyewitness.
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5. Some thoughts on Frontier Fighting, II, by Col. C. Kirkpatrick, C.B., C.B.E.
6. Outline of the history of the British Army from 1858, by Capt. C. A. Chapman, 1/1st Punjab Regiment.
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9. A Glimpse at the I.A.S.C., B.C., by Major C. G. Lloyd, C.I.E., M.C.
10. Map Spotting, by Capt. R. J. Wilkinson, O.B.E.

Reviews.

Printed by C. G. Harris at the Pioneer Press, Allahabad, and published by Major C. A. Bird, R.E., for the United Service Institution of India, Simla.

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United Service Institution of India.

RULES OF MEMBERSHIP.

ALL officers of the Royal Navy, Army, Royal Air Force, Colonial Forces, and of th Auxiliary Force, India, and Gazetted Government Officers shall be entitled become members without ballot, on payment of the entrance fee and annual subscri tion.

The Council shall have the power of admitting as honorary members the membe of the Diplomatic Corps, foreign naval and military officers, foreigners of distinctiv other eminent individuals, and benefactors to the Institution, not otherwise eligibl to become members.

Life Members of the Institution shall be admitted on the following terms:—

Rupees 120 + entrance fee (Rs. 10) = Rs. 130.

Ordinary members of the Institution shall be admitted on payment of entrance fee of Rs. 10 on joining, and an annual subscription of Rs. 10, *to be paid advance*. The period of subscription commences on 1st January.

Subscribing members of the Royal United Service Institution, Whiteha London, are not liable for entrance fee while the affiliation rules are in force.

Life members receive the Journal of the Institution post free anywhere, b ordinary members only in India. All members may obtain books from the library paying V.-P. postage.

Honorary Members shall be entitled to attend the lectures and debates, and to u the premises and Library of the Institution without payment; but should they des to be supplied with the Journal, an annual payment of Rs. 10, *in advance*, will be require

Divisional, Brigade and Officers' Libraries, Regimental Messes, Clubs, and oth subscribers for the Journal, shall pay Rs. 10 per annum.

Sergeants' Messes and Regimental Libraries, Reading and Recreation Rooms sha be permitted to obtain the Journal on payment of an annual subscription of Rs. 10.

If a member fails to pay his subscription for any financial year (ending 31 December) before the 1st June in the following year, a registered notice shall be s to him by the Secretary inviting his attention to the fact. If the subscription is n paid by 1st January following his name shall be posted in the Reading Room for s months and then struck off the roll of members.

Members joining the Institution on or after the 1st October, will not be charg subscription on the following 1st January, unless the Journals for the current y have been supplied.

Members are responsible that they keep the Secretary carefully posted in reg to changes of rank and address. Duplicate copies of the Journal will not be supp free to members when the original has been posted to a member's last known addr and not been returned by the post.

Members or Subscribers to the Journal, intimating a wish to have their Journ posted to any address out of India, shall pay in advance Rupee 1 per annum. cover foreign postage charges, but Life Members who have left India shall not be li for foreign postage on Journals.

All communications shall be addressed to the Secretary, United Service Institut of India, Simla.

Contributions to the Journal.

All papers must be written in a clear, legible hand, and only on one side of paper. All proper names, countries, towns, rivers, etc., must, when in manuscr be written in capital letters. All plans must have a scale on them.

Contributors are responsible, when they send articles containing any informa which they have obtained by virtue of their official positions, that they have c plied with the provisions of A. R. I., Vol. II., para. 204, and King's Regulations, para.

Anonymous contributions under a *nom-de-guerre* will not be accepted or knowledged; all contributions must be sent to the Secretary under the name of writer and the paper will, if accepted, be published under that name unless a wi expressed for it to be published under a *nom-de-guerre*. The Executive Comm will decide whether the wish can be complied with.

The Committee reserve to themselves the right of omitting any matter which consider objectionable. Articles are only accepted on these conditions.

The Committee do not undertake to authorise the publication of such paper are accepted, in the order in which they may have been received.

Contributors will be supplied with three copies of their paper *gratis*, if publi

Manuscripts of original papers sent for publication in the Journal will not be retu to the contributor, unless he expresses a wish to have them back and pays the postag

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MILITARY WIDOWS' FUND,

——BRITISH SERVICE——

THIS FUND enables a British Service (Army) officer, by subscribing from Rs. 6 to Rs. 10 per quarter, to assure, in the event of his death while on the Indian Establishment, immediate payment:—

To his widow	Rs. 5,850	to	Rs. 8,250
For each child	„ 500	to	„ 750

Payments are made immediately on receipt of report of death, irrespective of death occurring in or out of India.

The sum paid to the widow varies with subscription and the sum for each child varies with age of child. Subscriptions are based on the rank of the officer.

Benefits are payable whether the deceased officer's family is residing in India or not.

It is to the advantage of an officer to join the Fund on his first tour of service in India, as otherwise, on joining it in a subsequent tour he would have to pay subscriptions for any previous tours in the country as a married officer, since 1st January 1919.

The Fund (late Queen's Military Widows' Fund) was established in 1820, to assist families of British Service (Army) officers dying in India, and mainly to enable them to return Home without delay.

The Fund is controlled by a Committee consisting of and elected by subscribing officers serving at Army Headquarters, Simla.

For admission and rules apply to :—

The Secretary,
MILITARY WIDOWS' FUND,
Army Headquarters, Simla.

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United Service Institution of India.

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His Excellency the Governor of Bengal.
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His Excellency the Governor of Burma.
His Excellency the Governor of Bihar and Orissa.
His Excellency the Naval Commander-in-Chief, East Indies.
The General Officer Commanding-in-Chief, Northern Command.
The General Officer Commanding-in-Chief, Southern Command.
The General Officer Commanding-in-Chief, Eastern Command.
The General Officer Commanding-in-Chief, Western Command.

MEMBERS OF THE COUNCIL, 1924-25.

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12. The Director, Royal Indian Marine.
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* Members of the Executive Committee.

Additional Members of the Executive Committee.

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Librarian	...	Miss E. K. Sussens.
Bankers	...	LLOYD'S BANK Ltd. (Cox's and King's Branch), Simla

1. The United Service Institution of India is situated at Simla.

2. Officers wishing to become members of the United Service Institution of India should apply to the Secretary. The rules of membership are printed inside front cover.

3. The reading-room of the Institution is provided with all the leading newspapers, magazines, and journals of military interest that are published.

4. There is a well stocked library in the Institution, from which members can obtain books on loan free. Suggestions for new books are solicited, and will be submitted to the Committee. Books are sent out to members V.-P. for the postage.

5. The Institution publishes a Quarterly Journal in the months of January, April, July and October which is issued postage free to members in India and to all life members but ordinary members wishing to have their journals sent to any address out of India must pay in advance Re. 1 per annum to cover foreign postage charges.

6. Members and the public are invited to contribute articles to the Journal of the Institution for which honoraria will be awarded by the Executive Committee. Rules for the guidance of contributors will be found in para. IV, Secretary's Notes.

7. Members are responsible that they keep the Secretary carefully posted with regard to changes of address.

8. When on leave in England, members can, under the affiliation rules in force, attend the lectures and make use of the reading-room, etc., of the Royal United Service Institution, Whitehall, on payment of a subscription of 5 shillings per six months.

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United Service Institution of India.

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I.—New Members.

The following new members joined the Institution from 7th June 1924 to 12th September 1924:—

Life Members.

Lieut. A. C. Maynard.
Captain R. A. B. Freeland.
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Captain R. C. McCay.
Captain G. J. Eccles.
Captain T. R. Evans.
Captain K. C. D. Dawson.
Captain E. L. W. Fox.

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Col. A. E. McNamara.
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Captain A. T. R. Harris.
Lieut. J. A. Sanger.
Air Vice-Marshal Sir E. L. Ellington.
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Lieut. R. W. W. Hills.
Captain K. G. Buchanan.
Major-Genl. R. N. Harvey.
H. E. Sir Malcolm Hailey.
Captain H. M. Tulloch.
Lieut. L. F. R. Kenyon.
Captain K. A. North.
Lieut. J. R. Vedder.
Lieut. J. L. Oliver.
Captain W. L. Lloyd.
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Captain J. R. Reynolds.
Lieut. R. R. Dauban.
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Captain F. E. C. Hughes.
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Capt. W. H. Pike.
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Captain C. G. A. J. Conyers.
Captain E. L. Griffith-Williams.
Bt.-Major A. E. Williams.
Capt. F. H. Eberli.
Lieut. R. F. M. Lowe.
Captain G. Uloth.
Captain L. W. Wood.
Bt.-Major D. E. Prideaux-Brune.
Lieut. L. E. Misa.
Capt. L. C. Reid.
Col. E. C. Jury.
Captain R. F. Worthington.
Captain E. C. Cross.
Lieut. D. N. Hill.
Captain T. N. Shelton.
Captain W. A'C. Beadon.
Major G. V. B. Gillan.

II.—Examinations.

Books on military history and languages with dictionaries are available in the Library and the following list of books, may be found useful for reference by officers, studying for promotion examinations or entrance to the Staff College.

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The lists of books presented and purchased as shown in the current year's journals should also be consulted.

The special periods of military history for future promotion examinations are as follows (*vide* I. A. O. 409 and 493 of 1924):—

1	2	3	4	5
Serial No.	Date of examination.	Campaign set for the first time.	Campaign set for the second time.	Campaign set for the last time.
1	April, 1925 ...	The Russo-Japanese War, 1904, to the Battle of Liao-Yang inclusive.	...	Campaign in Gallipolli (as given in Serial 3, column 3 of Army Order II of 1922).
2	October, 1925	Operations in Waziristan, 1919-20.	Russo-Japanese War (as given in Serial 1, column 3).	
3	April, 1926 ...	...	Waziristan (as given in Serial 2, column 3).	Russo-Japanese War (as given in Serial 1, column 3).
4	October, 1926	Campaign of the British Army in 1914 in France and Belgium from the outbreak of hostilities up to and including the operations on 9th September, 1914.	...	Waziristan (as given in Serial 2, column 3).

MILITARY HISTORY.

1. *The Campaign of the British Army in France and Belgium up to 20th November, 1914.*

A.—OFFICIAL ACCOUNT.

Sir John French's Despatches.

B.—OTHER BOOKS.

40 days in 1914 (General Maurice, new edition).

The Battle of the Marne (G. H. Perris).

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1914 (Viscount French).

General sketch of the European War Belloc).

The Great War (Colonel Sedgwick .

My Memoirs (Ludendorff).

Falkenhayn's Book.

Von Kluck's Book.

British Campaign in France, Flanders (Conan Doyle, 1914).

Nelson's History of the War.

Ypres (German General Staff).

Oxford pamphlets, August 1914. The Coming of the War (S. Williamson).

Oxford pamphlets, August 1914, Nos. VII and X.

Times Documentary History of the War, Vol. V, Military, Part I.

Times Documentary History of the War, Vol. VIII, Part III.

Der Grosse Krieg: Schlacht bei Mons.

Der Grosse Krieg: Schlacht bei Longwy.

Story of the Fourth Army (Montgomery).

2. *The Palestine Campaign.*

A.—Official Account.

A brief record of the advance of the Egyptian Expeditionary Force, 1919.

B.—Other Books.

Allenby's Final Triumph, by W. T. Massey.

How Jerusalem was Won, by W. T. Massey.

Outline of the Egyptian and Palestine Campaign (Bowman-Manifold).

3. *The Gallipoli Campaign.*

Gallipoli Campaign (outline of military operations).

Official Despatches.

The Dardanelles (Callwell).

Experiences of a dugout (Callwell).

Despatches from the Dardanelles (Ian Hamilton).

Gallipoli Diary („ „).

The Navy in the Dardanelles Campaign (Wemyss).

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4. *The Russo-Japanese War, 1904, up to and including the battle of LIAOYANG.*

A Staff Officer's Scrapbook (Ian Hamilton).

German official account.

Lectures on the strategy of the Russo-Japanese War (Bird).

Question on the Russo-Japanese War (Brunker).

Official History.

Outline of the Russo-Japanese War (Ross).

A study of the Russo-Japanese War (Chasseur).

My experiences at Nan Shan and Port Arthur (Tretyakow).

5. *Organization of Army since* 1868.

A.—ORGANIZATION OF ARMY SINCE 1868.

History of British Army, by Fortescue.

Outline of Development of British Army, by Maj.-Genl. Sir W. H. Anderson.

Our Fighting Services, by Sir Evelyn Wood.

B.—FORCES OF THE EMPIRE.

The Statesman's Year Book.

Army List.

Articles in Newspapers and Magazines, *viz.*, R. U. S. I.

Army Quarterly, Journal of the U. S. I. of India, etc.

6. *Development and constitution of the British Empire.*

A.—THE BRITISH EMPIRE.

Encyclopædia Britannica—(contains much concentrated information).

The Statesman's Year Book.

Whitaker's Almanack.

The Colonial Office List.

The British Empire and its History (E. G. Hawke).

The Government of the British Empire (Jenks, 1923).

The British Empire (6 lectures) (Sir C. P. Lucas, 1918).

The foundation and growth of the British Empire (J. A. Williamson, 1918).

The beginnings of English Overseas Enterprise (Sir C. P. Lucas, 1917).

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The Government of England (L. A. Lowell, 1912).

The Expansion of the British Empire (W. H. Woodward, 1900).

Overseas Britain (E. F. Knight, 1907).

The origin and growth of the English Colonies and of their system of Government (H. E. Egerton, 1903).

A short History of Politics (Jenks, 1900).

The English Constitution (Bagehot, 1909).

The Expansion of England (Sir J. Seely, 1883).

Introduction of the study of the law of the Constitution (A. V. Dicey, 1908).

England in the Seven Years' War (Sir J. Corbett, 1907).

Selected Speeches and Documents on British Colonial Policy, 2 Vols. (A. B. Keith, 1918).

B.—Books on Special Portions of the Empire or World.

The Rise and Expansion of British Dominions in India (Sir A. C. Lyall, 1894).

A brief history of the Indian Peoples (Sir W. H. Hunter, 1907.)

The Nearer East Hogarth, 1902).

Modern Egypt (Cromer, 1908).

Egypt and the Army (Elgood, 1924).

The History of Canada (W. L. Grant).

Nova Scotia (B. Wilson, 1911).

Report on British North America (Sir C. P. Lucas).

The Union of South Africa (R. H. Brand, 1909).

Short History of Australia (E. Scott).

History of the Australasian Colonies (Jenks, 1912).

The English in the West Indies (J. A. Froude, 1888).

The Lost Possessions of England (W. F. Lord, 1896).

7. *Military Geography.*

Naval and Military Geography of the British Empire (Dr. Vaughan Cornish, 1916).

Elementary Imperial Military Geography (Capt. D. H. Cole, 1924).

Introduction of Military Geography (Col. E. S. May).

Imperial Defence (Col. E. S. May).

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Main feature of the Japanese and other Pacific problems. (Reprinted from "Morning Post.") (Sifton Præl.)

Britain and the British Seas (H. J. Makinder, 1907).

Military Geography (Macguire).

Imperial Strategy (Repington).

War and the Empire (H. Foster).

Historical Geography of British Colonies (Dominions), 7 Vols. (Sir C. P. Lucas, 1906—17)—

Vol. 1, Mediterranean.
Vol. 2, West Indies.
Vol. 3, West Africa.
Vol. 4, South Africa.
Vol. 5, Canada.
Vol. 6, Australia.
Vol. 7, India.

The Influence of Sea Power on History (A. T. Mahan, 1890).

Historical Geography of the British Empire (Hereford George).

The Mastery of the Pacific (A. R. Colquhoun, 1902).

Frontiers (C. B. Fawcett, 1918).

III.—Payment for Articles in the Journals.

Articles accepted for publication in the Journal are paid for, and a sum of approximately Rs. 400 is awarded for articles and reviews published in each Quarterly Journal.

IV.—Contributions to the Journal.

Articles submitted for publication must be typed in *duplicate*. With reference to Army Regulations, India, Volume II, paragraph 204 and King's Regulations, paragraph 509, action to obtain the sanction of His Excellency the Commander-in-Chief to the publication of any article in the Journal of the United Service Institution of India will be taken by the Committee.

Instructions for the preparation of drawings and plans for reproduction by lithography.

These should be in *jet* black. No washes nor ribands of colour should on any account be used.

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If it is absolutely necessary to use colour (and these are only permissible in line work or names) the following will reproduce photographically, *i.e.*:—

Dark red, dark orange, dark green. No other colour should on any account be used.

V.—Library Rules.

1. The Library is only open to members and honorary members of the United Service Institution of India, members are requested to look upon books as not transferable to their friends.

2. No book shall be taken from the Library without making the necessary entry in the register. Members residing permanently or temporarily in Simla are requested to enter their addresses.

3. The United Service Institution of India is open all the year round—including Sundays—from 9 A.M. until sunset. Books may be taken out at any time provided Rule 2 is complied with.

4. A member shall not be allowed, at one time, more than three books or sets of books.

5. Papers, magazines, "works of reference" or books marked "Not to be taken away," or noted as "Confidential" may not be removed.

6. No particular limit is set as to the number of days for which a member in Simla may keep a book, the Council being desirous of making the library as useful as possible to members; but if after the expiration of a fortnight from date of issue it is required by any other member it will be re-called.

7. Applications for books from members at out-stations are dealt with as early as possible, and books are despatched per Registered V. P. P. They must be returned carefully packed per Registered Parcel Post within one month of date of issue, or application made for permission to retain them for a further period. This will always be granted unless the book is required by another member.

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8. If a book is not returned at the end of four months, it must be paid for without the option of return, if so required by the Executive Committee.

9. Lost and defaced books shall be replaced at the cost of the member to whom they were issued. In the case of lost books which are out of print the value shall be fixed by the Executive Committee, and the amount, when received, spent in the purchase of a new book.

10. The issue of a book under these rules to any member implies the latter's compliance with the rules, and the willingness to have them enforced, if necessary, against him.

11. A list of all books presented and purchased and also a list of books useful to members studying for the Staff College and promotion examinations will be found, under Secretary's Notes, in the quarterly issue of the U. S. I. Journal. Members are invited to note any books which they think might with advantage be procured for the Institution. The suggestions will be placed before the Secretary.

12. Members are invited to contribute presents of books, maps, and photographs of naval and military interest. These may be addressed to the Secretary, U. S. I. of India, Simla. They will be duly acknowledged.

VI.—Library Catalogue.

The new catalogue completed to 31st March 1924 is now available, Price Rs. 3-8-0 or postage paid Rs. 3-14-0.

VII.—Gold Medal Prize Essay.

Gold Medal Prize Essay Competition, 1924-25.

The Council have chosen the following subject for the Gold Medal Essay for 1924-25 :—

How can the balance be best maintained between the following considerations affecting the Regimental Officer :—

(*a*) The claims of his unit.

(*b*) The claims of his military education, in the widest sense, in the form of extra-regimental courses.

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The following are the conditions of the competition :—

(1) The competition is open to all gazetted officers of the Civil Administration, the Royal Navy, Army, and Royal Air Force or Auxiliary Force who are members of the U. S. I. of India.

(2) Essays must be printed or type-written and submitted in *triplicate.*

(3) When a reference is made to any work, the title of such work is to be quoted.

(4) Essays are to be *strictly anonymous.* Each must have a motto, and enclosed with the essay, there should be sent a *sealed* envelope with the motto written on the outside and the name of the competitor inside.

(5) Essays will not be accepted unless received by the Secretary on or before the 30th June 1925.

(6) Essays will be submitted for adjudication to 3 judges chosen by the Council. When the decisions of the 3 judges are received the Committee will submit the four essays, placed first in order by the judges, with their recommendations on the award of the Gold Medal to the Council, who will decide whether the Medal is to be awarded and whether the essay be published.

(7) The name of the successful candidate will be announced at a Council Meeting to be held in September or October 1925.

(8) All essays submitted are to become the property of the United Service Institution of India, *absolutely* and authors will not be at liberty to make any use whatsoever of their essays without the sanction of the Council.

(9) Essays should not exceed about 15 pages of the size and style of the Journal exclusive of any appendices, tables or maps.

By order of the Council,

SIMLA :
30th September 1924.

C. A. BIRD, MAJOR, R.E.,
Secretary, U. S. I. of India.

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VIII.—Army List pages.

The U. S. I. is prepared to supply members and units with manuscript or type-written copies of Indian Army List pages, at the following rate:—

Type-written, per page, Rs. 2.

IX.—

Books Presented.

Title.	*Published.*	*Author.*
1. European States System ..	1924	R. B. Mowatt.
2. The Common Weal ...	1924	H. Fisher.
3. Citizenship ..	1924	W. H. Hadow.
4. Egypt and the Army ...	1924	Lt.-Col. P. G. Elgood.
5. India, A Bird's-eye-View ...	1924	Lord Ronaldshay.
6. Indian Problems ...	1924	Dr. H. Whitehead.
7. Horse Sense and Horsemanship	1924	Lt.-Col. G. Brooks.
(All the above presented by the Oxford University Press, Bombay.)		
1. Veterinary Notes ...	1924	Major R. S. Timmis.
(Presented by Forster, Groom, London.)		
2. The Retention Examination and How to Pass it.	1924	
(Presented by the author Lt.-Col. G. D. Mouat).		
3. Story of the Empire ...	1924	Sir C. Lucas.
(Presented by Messrs. W. Collins, London, 2 copies.)		
4. Sport and Service in Assam and Elsewhere.	1924	Lt.-Col. Alban Wilson.
5. The Navy in the Dardanelles Campaign.	1924	Lord Wester Wemyes.
(Both presented by Messrs. Hutchinson and Co., London.)		

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	Title.	*Published.*	*Author.*
5.	Victors and Vanquished ... (Presented by Jonathan Cape, London.)	1924	C. B. Thomson.
7.	Perforated Map an aid to night operations. (Presented by Messrs. Gale and Polden, Aldershot.)	1924	Captain J. J. Edwards.
8.	Indian Military Law ... (Presented by W. Thacker, London.)	1924	Colonel S. T. Banning.
9.	History of the 121st Pioneers .. (Presented by Capt. J. Wilkinson.)		Major W. B. P. Tugwell.
10.	Tales from Turkestan ... (Presented by Messrs. Blackwood, London.)		Stor Lob.

The following pamphlets have been presented by the Secretary of Aldershot Military Society :—

1.	Training Lecture on Imperial Wireless and Cable Communication.	Col. F. A. Iles (1923).
2.	Use of Aircraft in Naval Warfare.	Comdr. R. B. Davies (1922).
3.	Situation in the Middle East	Lt.-Col. F. W. Barron (1923).
4.	Lecture on the Man-Power ...	Maj.-Genl. B. Burnett Hitchcock (1923).

Books Purchased.

1.	La Guerre des Femmes ...	1924	A. Reader.
2.	Present State of Germany ...	1924	J. H. Morgan.
3.	British Empire at Bay on the Western Front. (A descriptive map only.)	1918	A. Close.

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Tittle.	*Published*	*Author.*
4. Report of the Committee on Administration and Accounting for Army Expenditure.	1924	"Official."
5. Annual Report on the progress of Civil aviation. (And First Report on Air Mail Services, 1923.)	1923-24	Published by H. M. S. O., London.
6. Economics of the Hour ...	N. D.	J. St. Loe Strachey.
7. The Adventures of the Secret Service.	1924	Major C. E. Russell.
8. My Mission to Russia (2 Vols.)	1923	Sir George Buchanan.
9. Statesman's Year Book ..	1924	Sir John Scott Keltie.
10. A Field Artillery Group in Battle.	1924	Col. W. H. F. Weber.
11. Oxford History of India ...	1923	V. A. Smith.
12. Indian Military Law ...	1924	Col. S. T. Banning.
13. British Empire Atlas ...	1924	G. Philip.
14. How to Study for Promotion Examination.	1924	Capt. G. F. Hopkinson.
15. Soviett Russia ...	1924	Published by H. M. S. O., London.
16. Development of the Airship, with special reference to Transport (Paper No. 2).	1924	Comdr. C. D. Burney.
17. Future of Sea Transport (Paper No. 3).	1924	Archibald Hurd.
18. The Irish Revolution & how it came about.	1923	Wm. O'Brien.
19. Letters written during the Indian Mutiny.	1924	F. Roberts (Lord Roberts).
20. World War & After ...	1924	Sir H. J. Mackinder.
21. These Eventful Years (2 Vols.)	1924	Various authors.
22. Report of the Sub-Committee of Imperial Defence on National Imperial Defence.	1924	...

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Title.	*Published.*	*Author.*
23. Policy & Arms ...	1924	Lt.-Col. Repington.
24. Campaign of Liao-Yang ...	1914	H. Rowan-Robinson.
25. Out of My Life .	1920	Hindenburg.
26. Mastery of the Far East ...	1919	A. J. Brown.
27. Salonika Front ..	1920	A. J. Mann.
28. Our Italian Front ...	1920	Allen Warner.
29. Sportsman's Book for India ...	1904	F. G. Aflalo.
30. Development of the European Nations, 1870—1914.	1919	J. Holland Rose.

Books on Order.

Title.	*Author.*
1. Memoirs of Brig.-General Gordon Shepherd	Shane Leslie.
2. Mounted Tro s of the E. E. Force ...	Colonel Osborn.
3. The Merchan Navy (Vol. I) ...	A. Hurd.

Books for disposal.

The undermentioned books which are surplus to requirements are available for sale:—

Applications to purchase, stating price offered, should be addressed to the librarian.

Title.	*Published.*	*Author.*
1. Letters on Strategy (2 Vols.)	1898	Prince Kraft zu H.-Ingelfingen.
2. Conduct of War	1908	Von der Goltz.
3. Campaign of Germany ...	1872	Offl. Compiled by Dept. of Mily. History of the Prussian Staff.
4. Modern Strategy	1904	Lt.-Col. W. H. James.
5. Protection i War (2 copies) ..	1912	Maj.-Genl. F. J. Aylmer.
6. Art of War	1868	Baron de Jomini.
7. Do.	1873	Do.
8. Nation Arms		Von der Goltz.

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Title.	*Published.*	*Author.*
9. Memoirs of the War in the Southn. Dept. of the U. S.	1870	H. Lee.
10. Campaign in Thrace (2 copies) (6 lectures).	1913	Maj. P. Howell.
11. Reality of War	1909	Maj. S. L. Murray.
12. Sedan, 1870	1912	Lt.-Col. E. Picard.
13. La Guerre en Lorraine, 1870 ...	1912	Do.
14. Bohemian Campn. of 1866 ...	1914	Major R. F. Uniacke.
15. Outline of Shenandoah Valley Campn., 1861-1865	1913	Capt. J. W. Sandilands.
16. Outline of the Campn. in Bohemia, 1866 to the battle of Koniggratz inclusive (2 copies).	1914	Do.
17. Simple Tactical Schemes		Capt. R. S. Waters.
18. Solution of Tactical Problems (2 copies).	1911	Lt.-Col. Layland Needham.

SALE OF PERIODICALS.

This Institution offer the following periodicals to members on sale for twelve months—1st January to 31st December 1925. The papers will be sold to the members submitting the highest bids by 31st December 1924.

Each issue of the periodicals will be sent to the purchaser as soon as the next issue arrives in Simla. In the case of purchasers in Simla, delivery will be free, otherwise postage will be charged.

Titles.	*Published.*	*Cost per copy, new.*
	ENGLISH PUBLICATIONS.	*s.* *d.*
1. The Navy ...	... Monthly ...	0 6
2. Aeronautical Journal	... Do. ...	2 9
3. The Aeroplane ...	... Weekly ...	
4. The Empire Review	... Monthly ...	1 0
5. United Empire ...	... Do. ...	1 0
6. The Geographical Journal	... Do. ...	2 0
7. Journal of R. A. M. Corps	... Do. ...	2 0
8. Royal Engineers' Journal	... Quarterly ...	2 6
9. Journal of the Royal Artillery	... Monthly ...	2 6

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Titles.	*Published*	*Cost per copy, new.*
		s. d.
10. Monthly Notes of the Royal Astronomical Society ...	Monthly ...	4 0
11. Asiatic Review	Quarterly ...	5 0
12. Cavalry Journal	Do. ...	5 0
13. The Fighting Forces ...	Do. ...	

AMERICAN PUBLICATIONS.

1. Army and Navy Journal ...	Weekly ...	15 cents
2. Infantry Journal	Monthly ...	50 ,,
3. Coast Artillery Journal ...	Do. ...	50 ,,
4. Journal of the Franklin Institute	Do. ...	50 ,,
5. The Marine Corps Gazette ...	Quarterly ...	50 ,,
6. The U. S. Cavalry Journal ...	Do. ...	65 ,,
7. National Geographical Magazine	Monthly ...	

FOREIGN PUBLICATIONS.

1. Science Belge Militaire ...	Monthly ...
2. Revue International de la Croix Rouge (Swiss) ...	Do. ...
3. Revue Militaire Suisse (Swiss)	Do. ...
4. Revue Militaire General (French)	Do. ...
5. L'Afrique Francaise (French)...	Do. ...
6. Memorial de Artilleria (Spanish)	Do. ...

X.—Pamphlets.

The following are available for sale on application to the Secretary:—

(*a*) British and Indian Road space tables (separately), price as. 8 each plus postage. It is suggested that these may be useful for staff rides, etc.—

(*b*) Diagram of ammunition supply (India) price as. 4 plus postage.

(*c*) Skeleton diagram of signal communications of a division, price as. 6 plus postage.

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United Service Institution of India.

Prize Essay Gold Medalists.

(With rank of Officers at the date of the Essay)

1872..Roberts, Lieut-Col. F. S., v.c , c.b., r.a.
1873..Colquhoun, Capt. J. S., r.a.
1874..Colquhoun, Capt. J. S., r.a.
1879..St. John, Maj. O. B. C., r.e.
1880..Barrow, Lieut. E. G., 7th Bengal Infantry.
1882..Mason, Lieut. A. H., r.e.
1883..Collen, Maj. E. H. H., s.c.
1884..Barrow, Capt. E. G., 7th Bengal Infantry.
1887..Yate, Lieut. A. C., 27th Baluch Infantry.
1888..Maude, Capt. F. N., r.e.
Young. Maj. G. F., 24th Punjab Infantry (specially awarded a silver medal).
1889..Duff, Capt. B., 9th Bengal Infantry.
1890..Maguire, Capt. C. M., 2nd Cav., Hyderabad Contingent.
1891..Cardew, Lieut. F. G., 10th Bengal Lancers.
1893..Bullock, Maj. G. M., Devonshire Regiment.
1894..Carter, Capt. F. C., Northumberland Fusiliers.
1895..Neville, Lieut.-Col. J. P. C., 14th Bengal Lancers.
1896..Bingley, Capt. A. H., 7th Bengal Infantry.
1897..Napier, Capt. G. S. F., Oxfordshire Light Infantry.
1898..Mullaly, Maj. H., r.e.
Clay, Capt. C. H., 43rd Gurkha Rifles (specially awarded a silver medal).
1899..Neville, Col. J. P. C., s.c.
1900..Thuillier, Capt. H. F., r.e.
Lubbock, Capt. G., r.e. (specially awarded a silver medal).
1901..Ranken, Lieut.-Col. G. P. P., 46th Punjab Infantry.
1902 Turner, Capt. H. H. F., 2nd Bengal Lancers.
1903..Hamilton, Maj. W. G., d.s.o., Norfolk Regiment.
Bond, Capt. R. F. G., r.e. (specially awarded a silver medal).
1904..Macmunn, Maj. G. F., d.s.o., r.f.a.
1905..Cockerill, Maj. G. K., Royal Warwickshire Regiment.
1907..Wood, Maj. E. G. M., 99th Deccan Infantry.
1908. Jeudwine, Maj. H. S., r.a.
1909..Molyneux, Maj. E. M. J., d.s.o., 12th Cavalry.
Elsmie, Maj. A. M. S., 56th Rifles, F. F. (specially awarded a silver medal).
1911..Mr. D. Petrie, m.a., Punjab Police.
1912..Carter, Maj. B. C., The King's Regiment.
1913..Thomson, Maj. A. G., 58th Vaughan's Rifles (F.F.).
1914. Bainbridge, Lieut.-Col. W. F., d.s.o., 51st Sikhs (F.F.).
Norman, Maj. C. L., m.v.o., q.v.o., Corps of Guides (specially awarded a silver medal).
1915..No Award.
1916..Crum, Maj. W. F., v.d., Calcutta Light Horse.
1917..Blaker, Maj. W. F., r.f.a.
1918..Gompertz, Capt. A. V., m.c., r.e.
1919..Gompertz, Capt. M. L. A., 108th Infantry.
1920..Keen, Lt.-Col. F. S., d.s.o., 2/15th Sikhs.
1921..No Award.
1922..Martin, Maj. H. G., d.s.o., o.b.e., r.f.a.
1923..Keen, Colonel F. S., d.s.o., i.a.
1924..No award.

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MacGREGOR MEMORIAL MEDALS.

1. The MacGregor Memorial Medal was founded in 1888 as a memorial to the late Major-General Sir Charles MacGregor. The medals are awarded for the best military reconnaissances or journeys of exploration of the year.

2. The following awards are made annually in the month of June:—

(*a*) For officers—British or Indian—silver medal.

(*b*) For soldiers—British or Indian—silver medal, with Rs. 100 gratuity.

3. For specially valuable work a gold medal may be awarded in place of one of the silver medals, or in addition to the silver medals, whenever the administrators of the fund deem it desirable. Also the Council may award a special additional silver medal, without gratuity, to a soldier, for special good work.

4. The award of medals is made by His Excellency the Commander-in-Chief as Vice-Patron, and the Council of the United Service Institution who were appointed administrators of the Fund by the MacGregor Memorial Committee.

5. Only officers and soldiers belonging to the Army in India (including those in civil employ) are eligible for the award of the medal.*

6. The medal may be worn in uniform by Indian soldiers on ceremonial parades, suspended round the neck by the ribbon issued with the medal.

Note.

(*i*) Personal risk to life during the reconnaissance or exploration is not a necessary qualification for the award of the medal; but in the event of two journeys being of equal value, the man who has run the greater risk will be considered to have the greater claim to the reward.

(*ii*) When the work of the year has either not been of sufficient value or has been received too late for consideration before the Council Meeting, the medal may be awarded for any reconnaissance during previous years considered by His Excellency the Commander-in-Chief to deserve it.

MacGregor Memorial Medalists.

(With rank of officers at the date of the Award.)

1889..BELL, Col. M. S., V.C., R.E. (specially awarded a gold medal).

1890..YOUNGHUSBAND, Capt. F. E., King's Dragoon Guards.

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* *N.B.*—The terms "officer" and "soldier" include those serving in the British and Indian armies and their reserves, also those serving in Auxiliary Forces, such as the Volunteers and Corps under Local Governments, Frontier Militia, Levies and Military Police, also all ranks serving in the Imperial Service Troops.

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MacGregor Memorial Medalists—*(contd.)*.

1891..Sawyer, Major H. A., 45th Sikhs.
Ramzan Khan, Havildar, 3rd Sikhs.

1892..Vaughan, Capt. H. B., 7th Bengal Infantry.
Jaggat Singh, Havildar, 19th Punjab Infantry.

1893..Bower, Capt. H., 17th Bengal Cavalry (specially awarded a gold medal).
Fazaldad Khan, Dafedar, 17th Bengal Cavalry.

1894..O'Sullivan, Major G. H. W., R.E.
Mull Singh, Sowar, 6th Bengal Cavalry.

1895..Davies, Capt. H. R., Oxfordshire Light Infantry.
Ganga Dyal Singh, Havildar, 2nd Rajputs.

1896..Cockerill, Lieut. G. K., 28th Punjab Infantry.
Ghulam Nabi, Sepoy, Q. O. Corps of Guides.

1897..Swayne, Capt. E. J. F., 10th Rajput Infantry.
Shahzad Mir, Dafedar, 11th Bengal Lancers.

1898 Walker, Capt. H. B., Duke of Cornwall's Light Infantry.
Adam Khan, Havildar, Q. O. Corps of Guides.

1899..Douglas, Capt. J. A., 2nd Bengal Lancers.
Mihr Din, Naik, Bengal Sappers and Miners.

1900..Wingate, Capt. A. W. S., 14th Bengal Lancers.
Gurdit Singh, Havildar, 45th Sikhs.

1901..Burton, Maj. E. B., 17th Bengal Lancers.
Sundar Singh, Colour Havildar, 31st Burma Infantry.

1902..Ray, Capt. M. R. E., 7th Rajput Infantry.
Tilbir Bhandari, Havildar, 9th Gurkha Rifles.

1903..Manifold, Lieut.-Col. C. C., I.M.S.
Ghulam Hussain, Lance-Dafedar, Q. O. Corps of Guides.

1904..Fraser, Capt. L. D., R.G.A.
Moghal Baz, Dafedar, Q. O. Corps of Guides.

1905..Rennick, Maj. F., 40th Pathans (specially awarded gold medal).
Madho Ram, Havildar, 8th Gurkha Rifles.

1906..Shahzada Ahmad Mir, Risaldar, 36th Jacob's Horse.
Ghafur Shah, Lance-Naik, Q. O. Corps of Guides Infantry.

1907..Nangle, Capt. M. C., 92nd Punjabis.
Sheikh Usman, Havildar, 103rd Mahratta Light Infantry.

1908..Gibbon, Capt. C. M., Royal Irish Fusiliers.
Malang, Havildar, 56th Punjab Rifles.

1909..Muhammad Raza, Havildar, 106th Pioneers.

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MacGregor Memorial Medalists—(*concld.*).

1910..Steen, Maj. M., C.M.G., late 2nd Dragoon Guards (specially awarded a gold medal).

Tranter, Capt. F. G., R.E.

Khan Bahadur Sher Jung, Survey of India.

1911..Leachman, Capt. G. E., The Royal Sussex Regiment.

Gumukh Singh, Jemadar, 3rd Burma Infantry.

1912..Pritchard, Capt. P. P. A., 82nd Wallahjabad Light Infantry (specially awarded a gold medal).

Wilson, Lieut. A. T., C.M.G., 32nd Sikh Pioneers.

Mohibulla, Lance-Dafedar, Q. V. O. Corps of Guides.

1913..Abbay, Capt. B. N., 27th Light Cavalry.

Sirdar Khan, Sowar, 39th (K.G.O.) Central India Horse.

Waratong, Havildar, Burma Military Police (specially awarded a silver medal).

1914..Bailey, Capt. F. M., I.A. (Political Department).

Morshead, Capt. H. T., R.E.

Haidar Ali, Naik, 106th Hazara Pioneers.

1915..Waterfield, Capt. F. C., 45th Rattray's Sikhs.

Ali Juma, Havildar, 106th Hazara Pioneers.

1916..Abdur Rahman, Naik, 21st Punjabis.

Zarghun Shah, Havildar, 58th Rifles (F. F.) (specially awarded a silver medal).

1917..Mian Afraz Gul, Sepoy, Khyber Rifles.

1918..Noel, Capt. E. W. C. (Political Department).

1919..Keeling, Lt.-Col. E. H., M.C., R.E.

Alla Sa, Jemadar, N.-E. Frontier Corps.

1920..Blacker, Capt. L. V. S., Q. V. O. Corps of Guides.

Awal Nur, C. Qm. Havildar, 2nd Bn., Q. V. O. Corps of Guides. (Special gratuity of Rs. 200.)

1921..Holt, Major A. L., Royal Engineers.

Sher Ali, Sepoy No. 4952, 106th Hazara Pioneers.

1922..Abdul Samad Shah, Capt., O.B.E., 31st D. C. O. Lancers.

Nur Muhammed, Lance-Naik, 1st Guides Infantry, F. F.

1923..Bruce, Capt. J. G., 2/6th Gurkha Rifles.

Sohbat, Head Constable, N.-W. F. Police.

Hari Singh Thapa, Survey Department.

1924..Havildar Rahmat Shah.

Naick Ghulab Hussain.

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The Journal
OF THE
United Service Institution of India.

Vol. LIV OCTOBER, 1924 No. 237.

EDITORIAL.

The reports of the judges on the Gold Medal Prize Essay Competition for 1923-24, have been considered by the Council, and the results of the Competition are now published.

In the first place the Council have decided not to make any award for the Gold Medal for 1923-24, as they do not consider that any of the essays submitted reached the required standard.

The first four competitors, in order of merit, are:—

Major C. F. Stœhr, R.E., Royal Bombay Sappers and Miners, Captain F. T. Birdwood, 4/11th Sikh Regiment, Major B. G. Peel, C.B.E., D.S.O., 1/1st Madras Pioneers and Captain A. S. Brooke, M.C., Royal Garhwal Rifles, and the money prize of Rs. 150 which now normally accompanies the award of the Gold Medal, is being divided between the first and second who receive Rs. 100 and Rs. 50, respectively.

* * * *

A number of useful points and suggestions were brought out in the essays; extracts of these have been made and submitted to Army Headquarters for consideration, and it is hoped that those who have spent time and trouble in preparing their essays will not feel that their efforts have been wasted. It must be said, however, that on the whole the results of the competition were disappointing. The subject was one which by its nature involved considerable reference to detail, but it is thought that many of our difficulties in administration within the army can be traced to the absence of clearly defined principles. It was

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hoped therefore that treatment of the problem would bring out or suggest such principles, and discuss present administrative arrangements in the light of those principles. Generally speaking this was not done.

It may be urged that Field Service Regulations, Volume I, now set forth the general principles of War organisation.

These principles are of a very general nature, and they can hardly be said to indicate the more specific principles which should govern the details of administration. Space does not permit of further elaboration of this point, but as an example of what we mean, we would cite the principle of the logical conclusion and the principle of simplicity. Both of these appear to be frequently neglected or obscured by conservatism and love of compromise.

* * * * * *

Details regarding the Prize Essay Competition for 1924-25, will be found under Secretary's notes.

* * * * * *

The course for candidates for the Staff College examination which has recently been held at Army Headquarters closely concerns the Institution in more ways than one. In the first place it has given an opportunity to a number of regimental officers to see the Institution, and to realise its scope, and its limitations. It is hoped that these officers will pass on information to others with regard to the former, and so help further to increase the membership, and will also make any suggestions for improvement.

In this connection, arrangements are being made to obtain for the Institution some of the schemes set during the course, and to get them printed for issue on payment.

The first few of these should be available early in December.

* * * * *

Attention is drawn to the Secretary's notes regarding the new Catalogue, which is now ready, and certain pamphlets available for sale.

It is regretted that owing to excess of zeal on the part of the printers, some serious errors occurred in the last Journal. We hope that the steps taken to eliminate such errors in future will be successful.

* * * * *

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"THE AMPLE PROPOSITION THAT HOPE MAKES."

A commentary on the first strategical* phase (November 1914—September 1915) of the Campaign in Mesopotamia. The facts are taken mainly from the War Diaries., The Official History, Vol. 1, of the Mesopotamia Campaign and the Report of the Mesopotamia Commission.

By Major-General Sir W. D. Bird, K.B.E., C.B., C.M.G., D.S.O.

So far in the History of the World it appears that one people only, the Romans, have been able to sustain simultaneously the burden of forces that were preponderant on more than one element; and this condition of affairs persisted for a comparatively short period, since after the conquest of Carthage the Romans were left without a serious rival on the seas as they knew them.

The various States that form the British Commonwealth—to use the term which is now in greatest vogue—are geographically so situated that, in the past at any rate, freedom of intercourse and for the exchange of commodities, as well as a considerable measure of security for territorial and other interests, could be assured through the maintenance on the seas of a powerful fleet. The British, therefore, have preferred, or indeed been obliged, to incur the risks attendant on a policy of low insurance against the hazards of warfare on land; and they have contented themselves with the development of power to finance war, rather than shoulder the double and unbearable load of large military as well as naval preparation against it.

* So many significations are now attached to the word strategy, that it is necessary to explain that from its derivation—*stratos*, an army, and *ago* to lead—is implied the art of employing military resources and of managing and manœuvring an army; whereas tactics—from *tasso* to set in order—imports the dispositions which are actually made for and during battle.

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This state of affairs has necessarily formed the framework of all past British policy, since policy depends on the power, actual or potential, to enforce it; and conversely power, unless ruin is to result, must bear an intimate relation with the policy which it supports. It may also be pointed out that it is evidently the duty of Governments, who are responsible for policy, to state its broad principles for their technical advisers, and to make them their confidants as to the interests that are to be protected and obligations which have been incurred.

Prior to 1914 control over the foreign policy of the British Commonwealth was exercised by the Government of Great Britain. The attendant obligations also, to a large extent, devolved on this Government, but only to a large extent. For although centralisation of authority is essential if resources are to be used to the best advantage, such centralisation is foreign to the genius of the British peoples. The measures necessary for the protection of their interests and to meet their obligations were therefore at the discretion of the various States; but a certain degree of supervision was exercised by Great Britain over the military measures that were adopted by her own dependencies and protectorates.

Under this system there were in the British Commonwealth in 1914, only two organisations capable of planning and undertaking the direction of a number of campaigns on land—the War Office in London and the Headquarters of the Army in India. The work of these establishments was co-ordinated by means of correspondence and intercourse between the War Office and the India Office, where a kind of Military Mission from the army in India was maintained, consisting of a Military Secretary and adviser with a small headquarters; by direct correspondence between the General Staffs in Whitehall and at Simla; and as regards questions of military policy, by a Committee of Imperial Defence composed of Ministers of the Crown in Great Britain and Naval and Military experts, Ministers from the Dominions and other persons having special qualifications being also from time to time summoned as members.

As a consequence of an arrangement under which political questions affecting our relations with Turkey and Persia were

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dealt with by the Foreign Office in London, while those arising in the Persian Gulf were to a large extent treated by the Government of India, a general sub-division of military, as distinguished from naval, responsibility had also been effected; and one item of this sub-division, according to the Report of the Mesopotamia Commission, was that, for the purpose of collecting military intelligence, "Asia was divided between the Imperial and Indian War Intelligence Departments ..... it will be sufficient for our immediate purpose to state that a line was drawn through Arabia from Akaba to Basra, all north of that line belonging to Whitehall, all south to Simla, Basra was thus given to India, Mesopotamia to Great Britain ...." (Map 1.)

It is also stated in this Report that, "For some years previous to the war a strong economy campaign had been carried on in India by the Indian and Home Governments, especially in connection with military expenditure ..... Reductions were made on the assumption that the Indian Army need not contemplate the likelihood of a collision outside India with the army of a European power, and the provision for the equipment, organisation and transport of the Indian Army was regulated by the requirements of frontier warfare alone." The necessary tendency of this policy was, it may also be observed, to increase the trend towards a localised outlook that all men inevitably acquire who remain for any length of time in one area, no matter whether in Asia or Europe. On the other hand, it is pointed out in the Official Account that, in view of the unfriendly attitude that had been adopted by Turkish officials in Mesopotamia towards the British in 1911, a Committee was assembled in India for the purpose of considering the military measures that might, in the event of war, be taken in the Persian Gulf; and among the proposals submitted by this Committee was one for the occupation of Basra by a division. But it seems that the Government of India at that time held the view that, although a descent on Basra might be undertaken in certain circumstances, a larger force than one division would be required for its occupation. Owing to improvement in our relations with the Turks the matter was then dropped until early in 1914, and it was actually again under consideration when the Great War broke out.

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At Home the eyes of the leaders of our small army were meanwhile directed principally towards Germany. "Words," writes von Bethman-Hollweg, "had already passed on both sides. The atmosphere was chilly and clouded with distrust." The military doctrine at that time prevailing in England as regards the course of hostilities on land should Great Britain be involved in a struggle between Germany and France, was that, if war took place, it would be of short duration. The opinion, however, was one which was also held in all responsible quarters, whether banking, mercantile or manufacturing. Civilisation, it was thought, could not withstand the unrelenting tension of a prolonged international struggle.

In 1906 a Turkish infantry battalion seized the oasis named Tabah, which lies on the frontier of Egypt near the north-eastern arm of the Red Sea. War between Great Britain and Turkey became a sudden possibility, and according to the evidence of Mr. Winston Churchill, the General Staff at the War Office drew up, after consultation with the Admiralty, a memorandum in regard to the action that might be taken by the British, but their conclusions were "entirely negative." "The life," also says Mr. Churchill, "of every thoughtful soldier or sailor in time of peace is made up of these experiences—intense effort, amid every conceivable distraction, to pick out across and among a swarm of confusing hypotheses what actually will happen on a given day and what actually must be done to meet it before that day is ended. Meanwhile all around people, greatly superior in authority and often in intelligence, regard him as a plotting knave, or at best an overgrown child playing with toys and dangerous toys at that." In this case the people who were superior in authority were apparently impressed with the negative character of the proposals of the experts. They decided, therefore, that the operation of landing an expeditionary force at or near the Gallipoli Peninsula would involve great risks, and should not be undertaken if other means of bringing pressure to bear on the Turks were available. The Turks yielded soon afterwards to a British ultimatum which was backed by a demonstration by the navy, all thought of offensive war against Turkey was dismissed, and the General Staff plunged again into such preparations as were possible with the funds

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and forces at their disposal for the short, sharp contest that might arise against the might of Germany. And why, indeed, should the General Staff have contemplated the possibility of operations subsidiary to the great struggle? The course of which was more than likely to resemble those fierce, brief fights that take place between two heavy weight and champion boxers. If anticipations proved to be correct, and the history of all recent wars, except that in South Africa, lent weight to this opinion, the contest would be over before those who were not principals had been given the time in which to decide on the policy that they would adopt. (Map. 1).

War came, anticipated by few, almost incomprehensible to the majority, and hard realities displaced the visions of what was to have been. A series of demands, therefore, were made forthwith upon the authorities in India for the despatch of expeditions overseas to France, to Egypt and to East Africa. "The Indian Army* was thus suddenly and unexpectedly called upon to participate largely in external warfare for which no preparation had been made, as the contingency of such a conflict had been assumed by the Home and Indian Governments to be outside the sphere of reasonable probability, and the possibility of it occurring was actually under discussion on the outbreak of war in August, 1914."

The land-locked waters of the Persian Gulf had, in 1914, been for almost 300 years under the special care of Great Britain.

She had policed, charted, buoyed and lighted them; and, as pointed out by Lord Curzon, Britain could not permit the growth of rival interests in these areas, "not because it would affect our local prestige alone, but because it would have influences that would extend for many thousands of miles beyond." Nor had her supremacy been challenged until in comparatively recent times, first Russia then Germany attemped to secure a footing in the Gulf.

In 1900 while Great Britain was pre-occupied with the war in South Africa, the Germans had indeed actually succeeded in obtaining the consent of the Sultan of Turkey for their acquisition of a

* Report of the Mesopotamia Commission.

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lease of the little town and port of Kuwait. But its Shaikh stoutly denied that the Sultan was his suzerain at all, and affirmed on the other hand that he was under the protection of Great Britain. The lease therefore was not obtained by Germany.

Eight or nine years later resentment on the part of the Young Turks, who had seized political power in Turkey, led to another incident. Britain had lent to the Greeks moral support in their efforts to free Crete from Ottoman domination, and as a requital Turkish artillery bombarded the palace of the Shaikh of Muhammara,* a ruler living in the Persian province of Arabistan who was also a friend and ally of the British.

Relations with the Turks had however as pointed out above, improved during the period immediately preceding the Great War. In 1912, therefore, after long negotiations, Britain had informed the Turkish and German Governments that the request which had been made for participation with the Germans in the building of a railway from Constantinople to Baghdad would be withdrawn on certain conditions. Of these the most important were the admission of two British representatives on the Board of the railway company; that the railway was not to be continued beyond Basra without the consent of the British Government; and that the right of navigation on the rivers of Mesopotamia enjoyed by British subjects should be confirmed and extended. The Turks and Germans found themselves able to reconcile these conditions with their interests, and by 1914 negotiations had practically been completed in regard to these and other matters, such as the definite recognition of the permanence of the then existing state of affairs in the Persian Gluf.

But Britain had acquired other and perhaps equally important interests in and near the Gulf. In the year 1913, with the object of securing a supply of petroleum for use by the navy, the Government had concluded a convention with the Anglo-Persian Oil Company, investing a sum of £2,200,000 in its ordinary shares.

* Persia was suzerain over this Shaikh, who although nominally paramount in Southern Arabistan had but little real authority over the areas lying to the west of the Karun.

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This corporation obtained oil from large fields at Maidan-i-Naftun in Arabistan, which were protected by the Bakhtiari tribesmen under an arrangement with the company. There was also a refinery and storage tank at Abadan in the territory of the Shaikh of Muhammara on the left bank of the Shatt-al-Arab,* and a pipe line leading mainly through his territory, and these were policed under the orders of the Shaikh. Apart, then, from larger questions as to the effect on the security of India were the Turkish dependency of Mesopotamia and the head of the Persian Gulf to fall under the control of a power that was definitely hostile to her, Great Britain could not afford to be indifferent to events in the Gulf and its neighbourhood.

In August 1914 the German ambassador in Constantinople "suborned the Press .... He pointed out the advantages to be gained by co-operation with the Central Powers, whose success was said to be assured .... Egypt would be restored to Turkey: India and the Moslem countries would be rallied by German influence to the Sultan .... Germany would dominate the West, her ally Turkey the East." The German warships Goeben and Breslau now escaped from our Mediterranean squadron and steamed in the Dardanelles on the 10th August, and a bogus sale of the ships was at once negotiated to the Porte, while Great Britain on her part had already withheld from the Turks the two "Dreadnoughts" that had been built in England. A precarious position, to say the least, had therefore arisen as regards the future action of the Turks, in spite of the fact that a pro-British feeling was still prevalent in influential Turkish quarters.

The mobilisation of the Turkish armies had commenced on the 3rd August, and German officers and men, in addition to those who were already serving in the Turkish army, then began to appear in Turkey. In the middle of the month reports also began to be received of anti-British feeling in Mesopotamia and certain naval measures were in consequence taken for the safeguarding of our interests. "Towards the close of September 1914, it became self-evident," says the Report of the Mesopotamia

* The waterway was owned by the Turks, the Persians possessed the right of its free navigation, and for many years the river had been charted and buoyed by the British.

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Commission, "that Turkey was likely to become a hostile belligerent, and in anticipation of this contingency Sir Edmund Barrow, Military Secretary of the India Office, wrote a minute on September 26th, 1914, entitled "The rôle of India in a Turkish War." In this paper he advocated the despatch of a small expedition—one infantry brigade and a couple of mountain batteries—to occupy Muhammara or Abadan, so as to "notify to the Turks that we meant business and to the Arabs that we were ready to support them." He suggested, further, that the rest of the division should be sent to the Gulf so as to be in a position to support the advanced detachment, and his minute was concluded with the following words: "This seems the psychological moment to take action. So unexpected a stroke at this moment would have a startling effect:—

"(1) It would checkmate Turkish intrigues and demonstrate our ability to strike.

"(2) It would encourage the Arabs* to rally to us, and confirm the Shaikhs of Muhammara and Kuwait in their allegiance.

"(3) It would safeguard Egypt, and without Arab support a Turkish invasion would be impossible.

"(4) It would effectively protect the oil installation at Abadan.

Such results seem to justify fully the proposed action."

These proposals were laid before the Earl of Crewe, the Secretary of State, India Office, and Lord Kitchener, the Secretary of State, War Office.

It has been said that, "the attainment of difficult ends . . . is dependant on some preconception of them, and the clearness and adequacy of this preconception conditions the choice of means, and, therefore, the chances of success." The contriving

* The population of Mesopotamia, including that of Arabistan, amounted, in 1914, to perhaps 2,500,000. Of these 1,500,000 were Arabs, either Bedouin, Townsmen or Marshlanders, the remainder being Kurds, who inhabit the northern and north-eastern highlands, Turks, Persians, Jews, Armenians and others. As the result of unsuccessful wars waged by Turkey against Italy in 1911, and against the Balkan States in 1912-1913, unrest was prevalent among the Arabs both in Mesopotamia and Arabia. A general rising of the former against the Turks was, even prior to the Great War, not considered to be beyond the bounds of possibility, and it was thought, therefore, that they would now be glad of the opportunity to rid themselves of Turkish domination.

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of an effective plan of campaign consequently involves not only a definite notion of the objects that are to be attained, but also of the various items, such as time, topography, climate, troops transportation, moral, arms, equipment, clothing, supply, that must be taken into consideration or employed for their attainment. In addition a strong effort of imagination is required both as to the manner in which the armed forces can best be used, and in regard to the counter-measures that are likely to be taken by the enemy.

For various reasons which have been briefly indicated, careful account was not taken, until almost on the eve of war with Turkey, of the measures that would be necessary in such an eventuality. "The likelihood," says the Report of the Mesopotamia Commission, "of a war with Turkey in alliance with Germany did not, previous to that date, seem to India to be a reasonable probability. It was also asserted by Sir Beauchamp Duff (the Commander-in-Chief) that in order to prevent overlapping there was an understanding that the Whitehall Intelligence Department would take Mesopotamia in hand, and that they deprecated the Indian authorities preparing plans for a campaign in that country. Information which Whitehall collected about the country was, however, sent to India."

As is now well known it was on the spur of the moment then decided that the British should invade Mesopotamia. But if the military problems that would arise in the event of a war with the Turks as well as the Germans had been duly weighed in time of peace, it still seems probable that the invasion of this country by a portion of the army in India would have taken its place in the structure of Great Britain's plan of action in the case of a world war; since very powerful arguments would have been used in favour of an offensive in this direction.

No great nation, least of all the British, can afford to remain quiescent under insult, and political considerations alone, even had there been no possibility of a *jahad* spreading from Persia to the Indian frontier, would doubtless have negatived a passive attitude towards Turkey in these regions. From the military point of view it could have been urged that the security both of India and Egypt might be better assured by obliging the Turks

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to parry rather than by allowing them to deal blows. Further, the difficulty of the problems of the defence of our seaborne commerce would have been greatly increased were the mouth of the Tigris and its neighbourhood to become a base for German raiders of our commerce; and it was evidently important to prevent the oil fields from falling under the control of our enemies. Lastly the British obligations as regards the Shaikhs of Muhammara and Kuwait must be honoured, and there would at least be a possibility that the appearance of a British force of sufficient strength to hold its own against the Turks, might tempt the Arabs to revolt against their Turanian masters.

On the other hand an expedition to Mesopotamia, carefully planned in advance, would certainly have fallen into its proper place as one of those subsidiary operations by which all great structures must be buttressed. Our purposes would have been confined within definite limitations, and the leading idea would, it is safe to say, have been far different from that which gradually began to dominate the minds of those who controlled the operations.

Both before and after the period when Sir Edmund Barrow drew up his memorandum a considerable correspondence took place between the authorities at Home and in India, "from which it appears that Enver Pasha and a number of German confederates were intriguing against the British Government, and that arms and ammunition were being sent to different places in Turkish territory, that many secret emissaries, including German Officers, were about to try and raise a *jihad* in the countries lying between Mesopotamia and India." On the 26th September, therefore, a warning was despatched to India that it might be necessary to send a portion of the 6th Indian Division, which it had been intended to move to France, for the purpose of making a demonstration at the head of the Persian Gulf; and after some fluctuations of opinion the Government at Home decided, on the 2nd October, to despatch, as Expedition D. to the Persian Gulf, one infantry brigade of this division and two mountain batteries. The sloops Odin and Espiègle and the Indian Marine steamer Lawrence had already undertaken the duty of patrolling the Shatt-al-Arab between Muhammara and the sea, but only the Espiègle was actually retained in Persian waters, that is in the Karun.

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On the 3rd October further instructions were telegraphed to India from the India Office, and two days later the Secretary of State informed the Government of India that: "The force under orders is only intended to occupy Abadan, protect oil tanks and pipe line, cover landing of reinforcements if these should be necessary and show Arabs that we intend to support them against Turks. With warships at Muhammara, troops detailed are considered ample for above purposes. Should Turkey become a belligerent, management of expedition will devolve* on you, but instructions as to scope of operations will of course come from me. Meanwhile you should prepare remainder of division for despatch but we do not propose to send more troops to Abadan till Turkey shows her hand, though it may be advisable to send a first reinforcement to Basidu as a near support. If political situation presages war the whole division would be wanted and land transport would be necessary. With this in view you might think it convenient to move division by rail and sea to Karachi, where presumably you would be better able to equip with mule transport ....."

Early in September, 1914, the troops of the 6th Indian Division had received orders that they were to mobilise for service in France. As the month drew to its close the World situation had so far changed that the probabilities veered towards service in a tropical rather that in a temperate climate. On the 4th October instructions reached the headquarters of the division that one infantry brigade and one artillery brigade, with administrative troops, were to be prepared to embark on the 10th of the month. Plainly there was now but little time for the alteration of arrangements which had been made with a view of participating in a campaign in Europe; and the staff, therefore, could do no more than telegraph that units must be ready to proceed with equipment as far as possible in accordance with the scale drawn up for a campaign during winter on the frontier of India, but carriage for tents would not be provided. In the light of what

* According to the Official History, it had been customary for the Government of India to direct the course of operations which were conducted by troops that were both drawn from India, and were based on this country. Such general control as was required on the part of the Government at Home was exercised not through the War Office but through the India Office.

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subsequently occurred these administrative arrangements necessarily appear to be inadequate; but since it was then only intended "to occupy Abadan," the claim may reasonably be made that the expedition was as well found as could in the circumstances be expected.

The detachment, some 5,000 men, comprising the 16th Infantry Brigade, with two six gun ten-pounder Mountain Batteries and other troops, that was about to be despatched from India, was placed under the command of Brigadier-General W. S. Delamain. Sailing from Bombay on the 16th October the transports first proceeded to the island of Bahrain, on the western shores of the Gulf, and anchored on the 23rd off Manama. (Map 1.)

On the 10th October General Delamain had received instructions in regard to the mission that was to be undertaken by this force, and had been warned that it was his duty both to avoid hostilities with the Turks and friction with the Arabs. Should war with Turkey break out the remainder of the 6th Division would be sent to the support of the detachment; and in the meanwhile such military and political action as might be feasible was to be taken with the object of safeguarding the positions of the troops. Delamain was also told that, if this was possible, Basra was to be occupied in the event of war with the Turks. It was estimated that in all there were perhaps as many as 10,000 Turkish* and Arab soldiers, and 5,000 reservists in Mesopotamia, but none of the troops were well trained. About 9,000 men with 50 or 60 guns of old pattern could perhaps be concentrated at Basra and in its vicinity. Guns, it was said, had been placed in positions on the banks of the Shatt-al-Arab below Basra, and it was probable that the fairway of the river had been blocked by means of vessels that had been sunk in it, and that the channel of the stream had been mined.

* The headquarters of four divisions, the 35th, 36th, 37th and 38th, were in time of peace located in Mesopotamia, and also those of three reserve commands which were to be used for the formation of "murattab" divisions comprising recruits and reservists. A Mesopotamian division was generally composed in the main of Arab troops officered by Turks. The war establishment of an active division amounted to about 10,500 men with 12 machine guns and from 24 to 36 field or mountain guns, many of old pattern, but the strength rarely exceeded 7,000 men, and the administrative services were not on a high plane of efficiency.

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Three alternative projects were also dealt with under the heading of 'plans.' First there was a scheme for the protection of British interests in the areas at the head of the Persian Gulf by means of the occupation of the Abadan, which might, it was thought be effected by advancing up the Bahmanshir channel so as to avoid trespassing on Turkish territory. Should it be necessary to support the Shaikh of Muhammara a force of not less than one division should occupy Basra, and Delamain, in this case, was to take the preliminary measures that would then be requisite such as the capture of Fao which would be followed by a movement up the Shatt-al-Arab. Should war be declared against the Turks much the same course of action would be persued.

In spite of the tenor of these instructions the Government of India were still apparently in doubt as to the desirability of sending troops direct to Mesopotamia, so long as there was still a possibility of the maintenance of peace with Turkey. The transports therefore remained at Manama for some days. Meanwhile it was ascertained that the movements of the force had come to the knowledge of the Turks, and the greatest publicity that was possible was in consequence given to its presence in the Gulf with the object of impressing the Arabs. The time also was usefully spent in practising the troops in the use of boats and in rehearsing the operations of landing.

On the 29th October the Turks bombarded Odessa and other Russian ports. On the 31st, therefore, definite instructions were issued by the India Office that the force under General Delamain was to proceed to the Shatt-al-Arab and, with the assistance of the naval vessels, was to capture an enemy battery that had been placed at Fao. Delamain was then to drive the Turks northwards, and if possible above the mouth of the Karun, after which he was to await the arrival of reinforcements. Actually the detachment was not able to sail for the Shatt-al-Arab, under escort of H. M. S. Ocean, an old battleship, until the 2nd November, and the outer bar, where the sloop Odin was lying, was reached on the evening of the 3rd. Two days were then spent in preparing the ship's boats for the work of conveying the troops ashore, and, on the 5th, the date on which war was declared against Turkey, the transports passed the outer and anchored

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out-side the inner bar in the mile wide estuary of the river. On the next day the Odin, a full-rigged ship carrying four 6-inch guns, two 3-pounders and two machine guns, and an armed launch bombarded the Turkish battery situated near a fort which stood three miles to the west of the telegraph station at Fao. The enemy's guns were soon silenced and subsequently a detachment of infantry was landed by the British. After occupying and dismantling the fort the troops re-embarked on the 7th November.

The ships then steamed up the broad stream of the Shatt-al-Arab past "country as flush with the river as if it had been planed down to it. On either side runs a belt of date palms half a mile wide..... Beyond was howling desert, not even picturesquely sandy but dried up marsh overblown with dust.... The only relief to the landscape was when (the ships) passed tributaries and creeks each palm fringed like the river." The vessels went on until within sight of and three miles below the extensive buildings, chimneys, tanks and wharves of the oil refinery on Abadan island. These were being protected by the Espiègle, a sister ship of the Odin, which had previously been lying at Muhammara. A covering position was then selected at Saniyah in the groves of date palms on the right or Turkish bank of the river, two and a half miles above the oil works and nine from Muhammara, and the landing of the troops was at once commenced. The disembarkation of the men and animals was completed on the 10th November, and meanwhile the construction of entrenchments had been taken in hand. But fire-wood, vegetables and other supplies that had been brought from India were kept on board the vessels, as they could then be moved quickly by water and transport was not available for their carriage on land.

There was a collision with a small body of the enemy on the 11th November, and rain fell heavily on the 12th and 13th converting the surface of the ground into a quagmire. Lieutenant-General Sir A. A. Barrett, commanding the 6th Division, reached the mouth of the river on the 13th with the first of the transports carrying the 18th Infantry Brigade, the 10th Field Artillery Brigade of eighteen 18 pounders, and other units that had been sent to reinforce the detachment under Delamain.

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The orders which had been issued to Barrett had indicated Basra as his objective, the place being, as was now estimated, held by Subhi Bey with 3,500 Turko-Arab* regulars, three or four batteries and 1,000 gendarmerie. If, after taking over the command from Delamain, Barrett considered that his force was sufficiently strong to do so, an advance on Basra was to be made. The remainder of the 6th Division, the 17th Infantry Brigade and other units, would embark for Mesopotamia on the 19th November at Bombay.

While the concentration of Barrett's force amounting in all to about 10,000 fighting men was being slowly effected, a skirmish took place on the 15th when the Turks were driven away from the vicinity of the British camp. On the next evening information came to hand that the enemy were now in position about and to the north of Sahil, the total force aggregating perhaps 3,500 Turko-Arab regular infantry and 350 gendarmes, with four field guns, eight mountain guns and three machine guns, and 1,000 Arab tribesmen. An apprehensive message was also received soon afterwards from the Shaikh of Muhammara, who complained that he was concerned lest the Turks should cross to the left bank of the Shatt-al-Arab and invade his territory; and pointed out that the attitude of the local tribes of Arabs would depend on whether the British troops could take the offensive without delay.

General Barrett was therefore at once placed in one of those dilemmas which commonly confront a commander when in the field, for it is a principle that a leader will usually be well advised not to assume the offensive until he is prepared for every eventuality that may supervene, and the concentration of the British force had not yet been effected. Every principle, however, must be applied to the particular circumstances of the case, and there were now powerful motives in favour of an immediate attack on the enemy. It was, for instance, evidently of importance from the political point of view to safeguard the territory of the Shaikh of Muhammara, and on the military side it was desirable to gain

* The British had ascertained that the 38th Division was in Mesopotamia in addition to gendarmerie and certain newly raised units. According to Turkish accounts there were 18,000 troops with 44 guns in the country, and of these some 5,000 with 18 guns were in the vicinity of Basra.

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the confidence and support of the Arabs. In addition certain river steamers belonging to British firms which traded on the Tigris were lying in the mouth of the Karun, the services of which would greatly increase the mobility of the British force, and these could not join Barrett until the Turks had been driven to the north of the junction of the two rivers. It was no doubt more probable that a decisive success would be gained after the British force had been fully concentrated, and it is plain that such a success would have solved all immediate military and political problems so long as its achievement was not unduly delayed. But whether decisive success could have been obtained without the additional mobility that would be provided by the river vessels is doubtful. It appears, then, that since from the experience which had been gained on the 15th he was justly confident that his troops would again beat the enemy, Barrett decided that he must fight with the forces that were then available if this was necessary in order to gain mobility, and "to move his camp eight miles forward on the Turkish bank (of the Tigris) in order to safeguard the Shaikh of Muhammara."

On the 17th November accordingly the British force amounting to about 7,000 infantry, 200 cavalry, 12 mountain guns and 6 field guns, or perhaps 8,500 in all, marched off early in the morning over the level and unobstructed plain lying inland of the groves of palms. The military could also be supported from the river by the naval sloops Odin and Espiègle and two small armed launches. An engagement soon commenced in which the Turks were decisively beaten, in spite of rain which made the surface of the ground as slippery as ice, and of the confusing mirage that troubles all the Mesopotamian flats by distorting in almost incredible fashion every object that is visible to the eye; and after the action the British, whose casualties had amounted to about 450, went into bivouack at Sahil.

The Turks now hastily abandoned Basra which was occupied by the troops under Barrett on the 22nd November.

The ordinary measures of administrative precaution then occupied much of the attention of the British, and these included the appointment of a military governor, the division of the town

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into areas for discipline, the bridging of the numerous minor creeks and the construction of communications; for there were neither metalled roads nor metal for them in Basra, nor were the tracks leading through its tortuous lanes even comparatively smooth. It was found that the port possessed only one small landing stage, which was situated at the German consulate, and a few sheds on a river front which was little better than a swamp. All shipping consequently was obliged to lie out in the stream of the Shatt-al-Arab, which is from 400 to 500 yards wide but without depth of water near its banks; and owing to the difficulty of landing stores, and to congestion ashore, the line of vessels soon extended for a distance of five miles. With energy and good will the principal difficulties were, however, soon surmounted, and for a time things settled down to a workable system.

Meanwhile a reconnaissance had been made by the naval vessel on the 25th November for a distance of about 50 miles up the river towards Kurna, a township of low hovels which stand in a straggling grove of palms on swampy flats at the junction of the blue sluggish Euphrates and the yellow rapid Tigris. An obstruction was located in the stream about two miles below the place, and it was reported by Arabs that another had been sunk near the town. It was also estimated that Kurna was occupied by from 400 to 500 Turkish and Arab regulars with 2 guns, and that these troops were supported by the Turkish gunboat Marmariss.

Owing to the few points at which the Turkish empire was in contact with neutral states, and to the lack of means of communication within its bounds, it was throughout the war most difficult to obtain accurate information as to the military movements of the Turks. Locally the Arabs proved themselves to be unreliable as agents, the marshy nature of the country rendered ordinary ground reconnaissance almost impracticable when at any distance from the enemy, and the force did not as yet possess aeroplanes. Such intelligence as was, however, available at this period seemed to disclose a situation which was distinctly favourable for the British. It was reported that, in consequence of heavy losses, some 2,000 wounded besides those that had been

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killed, which had been sustained by the enemy in their encounters with the British, the Turko-Arab regulars who had fought at Sahil had disbanded themselves, the few Turks being left to make their way northwards as best they could. The Arabs of the Delta were in the main now friendly owing to our successes, and were surrendering arms; and about 2,000 useful rifles had been taken in action or at Basra, where eight guns had also been abandoned by the enemy. On the other hand many Arab soldiers had either retained their arms or had sold them to local ruffians and these men might give trouble. Reports as to the Turkish forces that were at Baghdad were conflicting, their strength being estimated to be as low as 2,000 and as high as 20,000, but in any case they were far away.

An invading army is comparatively secure in any country so long as the troops press forward, for the very fact that they are advancing both prevents close examination of their power and also creates an impression of invincible force. In addition territory and resources are continually wrested from the grasp of the enemy, whose power in consequence is continually weakened. These arguments would in many cases suffice to produce an impulse towards onward movement, but when the army is operating in districts the inhabitants of which would, it is believed, not be unready to side with the invaders were they convinced of their superiority; and when the influence of victory, which so often wipes out all reasoned thought of the difficulties that are ahead, is thrown into the balance, there is a still greater incentive to act with daring. It is therefore not to be wondered at that suggestions were now made in favour of an immediate advance even as far as Baghdad; and "as General Barrett himself was led to 'believe that Arab co-operation and support would be forthcoming to the desired extent,' he considered at that time that an advance to Amara would both be feasible and expedient." While these matters were under consideration Barrett, however, received instructions of a less ambitious character, and was ordered merely to consolidate the position that had been won, to hold Basra and to arrange for the control of the river up to this point. At the same time he was asked for his opinion on the situation, the size of the force that would be required to secure our hold on Basra,

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the position in regard to transport and communications and the number of river steamers that would be available for the maintenance of a force operating in the areas to the north of Kurna.

On the 27th November General Barrett sent an answer to the last part of this communication, reporting that only three small steamers * and four iron lighters were available for use in an advance above Kurna, and that these could carry two battalions with supplies for seven days. The factor of transportation which limits all strategical and many tactical enterprises, had therefore already applied the brake against too headlong a course of action.

The Military Secretary of the India Office had, meanwhile, submitted to the Secretary of State, also on the 27th November, a proposal which seems to have been evoked by a telegram that had been received from the political officers serving with the force in Mesopotamia, now definitely known as Force D. In General Sir Edmund Barrow's paper, and perhaps as a compromise between a forward policy of advancing forthwith to Baghdad and one of inactivity, a suggestion was made in regard to the occupation of Kurna by the British. It was stated that when in possession of this locality they would be able to control the whole of the navigable waterways that lead to the Persian Gulf, and the rich cultivated area of the delta of the Tigris and Euphrates. It was also contended that a favourable impression would be produced on the minds of the Arabs; and it was declared that a British force when holding Kurna would be well placed to cover Persian Arabistan and to secure it against Turkish intrigues and incursions; a forecast which was not fulfilled, for there is no direct route between the two localities, and the roads † leading from Amara by Bisaitin to Arabistan run to the north and east of the extensive marshes that lie to the north-east of Kurna. In conclusion General Barrow observed that, "when we have reached

* One barge or lighter was generally lashed to each side of a steamer, and one steamer with its barges could carry from 500 to 800 infantry or a battery, or about three troops of cavalry.

† Metalled roads did not exist in lower Mesopotamia; and roads, so called, were mere tracks through scrub, or across open desert which was sometimes scored deeply with the remains of channels that had been used for purposes of irrigation.

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Kurna and fully established ourselves there it will be time enough to consider whether we should go further. We shall know the political situation at Baghdad and whether the Turks are in a condition to resist . . . . . But whatever we do, let us not stand still . . . . . "

The situation of the British troops in Mesopotamia was now in broad delineation as follows: The little force under the command of General Barrett had achieved to a large extent the purposes for which the invasion of the country had been undertaken. It had been shown that in spite of other pre-occupations the British were able to strike effective blows in this theatre of war; the sympathies of the Arabs seemed to incline towards us, but a general rising had not been made against the Turks as had apparently been expected; the allegiance of the Shaikh of Muhammara had been confirmed, and the fact of our presence at Basra would strengthen his hands and therefore contribute towards the security of the oil pipe line leading from Maidan-i-Naftun. On the other hand some further occupation of territory would be necessary in order to obtain the space in which to manœuvre for the defence of our base at Basra, and the British could not directly prevent from their positions round Basra an attack either on the oil wells or on the pipe line leading from them down the Karun; nor would their force be adequate for this purpose when once, as was only to be expected, the enemy rallied and concentrated troops for the reconquest of the ground that had been lost. Any pause or slackening in the operations of the British, combined with an advance on the part of the Turks, would also probably be followed by a reaction amongst the Arabs against the British, since the Arabs would then naturally become doubtful as to the side which would finally be left master of the country. Mesopotamia, however, was separated from the centres of Turkish military power by great distances, and these were but partly bridged by railways,* navigable rivers and well built roads. It might be supposed, therefore, that some considerable time, perhaps as much as two or three months, would elapse before formidable numbers could be developed against Force D.; and in the meanwhile the

* The railway from Constantinople (Haidar Pasha) had been completed as far as Ras-al-Ain, with the exception of the sections in the Taurus and Amanus mountains; and there was a line between Samarra and Baghdad.

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British would have leisure in which to review carefully the general and local situations, to balance the aims of policy and the means at disposal for their attainment against the obstacles to be encountered, and to take steps to secure the position that had been gained.

These considerations were not overlooked at the India Office, and the Secretary of State at once agreed to an advance on Kurna as soon as Barrett should consider himself able to undertake it. This, it was surmised, would probably be after the arrival of the 17th Infantry Brigade and the other troops that had now left India for Mesopotamia.

Two days later Barrett telegraphed his views on the local situation, but it seems that this telegram was mislaid and a copy of it did not reach India until the middle of December. General Barrett now stated that he proposed to consolidate the position of his force at Basra; to hold as an outpost Shaiba, a walled serai or fort in the desert, ten miles from Basra, round which rich merchants of Basra had built themselves half a dozen country houses standing in walled gardens; and also to establish a fortified post at Kurna; for all of which the force and means at his disposal would be sufficient. As to the future, he observed that the Arab tribes would in all probability side with the British if assured of the permanence of our occupation. Should it, he continued, be the intention of the Government to occupy and hold Baghdad, a gradual advance up the Tigris would be the best method of doing so, each locality being made secure and the Arabs conciliated before a fresh step forward was attempted. The employment of the routes by land leading through the valley of the Euphrates would, he said, not be advantageous, owing to the scarcity of water on them and also to the absence of grazing for transport animals.

In this review General Barrett had touched on a question of great political importance when he referred to the permanence of our occupation of the country; for if the British desired to secure the adhesion of the Arabs, the latter would probably require the assurance of continued support which would involve the shouldering of heavy obligations. This, it may be pointed out, constitutes a grave defect in the otherwise attractive procedure of rendeirng

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assistance in time of war to a subject race to rid itself of a dominant power. War also is an act of policy, and unless the demands of policy are definitely dangerous to the tactical security of an army, policy must therefore be supreme. In this case policy forbade the giving of such an assurance to the Arabs which, in the opinion of the Government, "would be considered by their allies as a breach of faith."

From the military standpoint Barrett's proposals, which were similar to, although made on a different basis from, those of the Military Secretary, India Office, followed what seem to be the lines of judicious procedure for an expedition on a limited scale that could not contemplate the construction of railways and other expensive undertakings which subsequently became matters of course. A force thrown on the defensive as, in effect, was Force D. after the occupation of Basra owing to its numerical weakness and lack of transport, must, under penalty of close investment, or of permitting the enemy to make leisured preparations for an attack when within easy striking distance of the areas where the defender's supplies and munitions are stored, secure for itself elbow room, space in which to manœuvre and the power of obtaining early information as to hostile movements. For this purpose detachments are usually thrust out in the direction of the enemy, so that news may be quickly obtained and time consequently secured for the concentration of troops with which to meet an attack. Having regard to our command of the river communications Kurna, although at some distance from Basra, was not unsuitable as a station for a detachment of this character; and with Kurna in our possesion we should be able to prevent direct communication by water between Turkish forces operating in the valleys of the Tigris and Euphrates. Shaiba, however, was merely a local outpost position, and was too near to that of the main body to assure for it the space in which to manœuvre with effect. But shortage of land transport doubtless prevented General Barrett from occupying a locality such as Nukhaila * at a greater distance from Basra, and the British were as yet unaware if Nukhaila could or could not be reached by water. Whether with the forces at his

* Owing to the absence of water except in the great rivers military operations could only take place in their vicinity.

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disposal Barrett would be able to hold his ground when the enemy had recovered from their surprise is another matter, and it was certainly a question that should forthwith have been taken up by those who were responsible for the direction of the operations of the British armies during the war. Since a decision to invade Syria, for instance, or to land British troops in Cilicia would completely have changed the nature of the problem in Mesopotamia, as would also have been the case had Persia embraced the cause of the Central Powers.

General Barrett at once took steps to give effect to his proposals, and Kurna, which was held by a larger number of the enemy than had been supposed, was taken on the 9th December together with about 1,000 prisoners. The remainder of the Turks, from 1,500 to 2,000 in number, retired up the Tigris.

Shortly before the capture of Kurna the 17th Infantry Brigade had begun to arrive from India on the 28th November. These troops were first sent to Maghil, five miles upstream of Basra, where there was a wharf and small dock, and what had been a depôt of the German-Baghdad railway company; but the place was subsequently abandoned owing to the marshy nature of the country round it.

Some other changes were also made in the distribution of the force, and as a result about the middle of December the garrison of Kurna consisted of about 3,500 men with 16 guns; the fort at Shaiba was held by 500 troops; at Basra, which had now been constituted the base of the force, there were 3,500 men with a couple of mountain guns; at Maghil there were also 3,500 men with 16 guns; and there was a detachment of one company at Fao. From these figures it will be evident that many of the fighting units were already falling below the authorised war establishment, which was approximately 14,900 men and 3,350 followers for the whole force. The troops also were still, and remained for many months almost wholly dependent on India for supplies of food, only a few vegetables being obtainable locally. (Map 2.)

General Barrett's detachment was now so distributed that a strong advanced post, fully capable of holding its own until reinforcements could be sent to its assistance, was standing at

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Kurna, which lay on what at this season of the year was the route which would most probably be followed by a force advancing to attack the British; a small group had been placed at Shaiba, that is in the direction from which the enemy might attempt to embarrass the British by moving from Nasiriya against their line of communications by water with the Persian Gulf, and the main body was standing in a central position ready to take action according to the requirements of the situation. The troops had, in the tactical sense, splendidly achieved their task; but only the weakness of the enemy's forces, combined with the advantages possessed by the British over the Turks in regard to the length of the lines of communication and the means of moving along them, inadequate as the latter would have been in other circumstances, formed any justification for the strategic liabilities that had been incurred. Whether the British detachment would in the end serve a useful purpose, would depend on whether the Turks would eventually be obliged to lay out a larger proportion of force in meeting than was involved in making it; whether the attainment of the naval, political and economic purposes on account of which the expedition had been launched would justify any larger proportionate expenditure of military force on the part of the British than on that of the Turks; and also on whether the success of the operations in Mesopotamia would be more advantageous to the British cause than their failure would be mischievous.

On receiving the news of the capture of Kurna, and also a report that there were in Baghdad not more than about 3,000 troops and that only some 3,000 reinforcements were on the way to Mesopotamia, the Secretary of State, India Office, telegraphed however, on the 14th December to enquire whether it would now be practicable to evict the Turks from the district round Nasiriya. Such geographical advantages of the position at Nasiriya as would be disclosed in the course of a careful study of an ordinary map were also mentioned; and it was contended that the possession of this locality would enable the British to block the lines of approach from Baghdad to Basra either along the Shatt-al-Hai or by the right bank of the Euphrates, and also to protect the Muntafik Arabs living in the vicinity of Nasiriya from interference on the part of the Turks. It was further pointed out that

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our occupation of the triangle Basra-Kurna-Nasiriya would exercise a salutary influence on the Arabian tribes inhabiting the areas to the south of the Euphrates, and would assure to us the power of controlling the whole of the approaches from the Persian Gulf to Mesopotamia.

The opinion has already been expressed that General Barrett's force was scarcely powerful enough to maintain the ground which had been gained. If this was in reality the case these suggestions, although valuable in the abstract, for it could fairly be contended that the position of the British force would have been more effectively secured by the occupation of Nasiriya, did not sufficiently balance against this advantage the number of men and means of transport that would be required to sustain the load of responsibility that must in the end be consequent on the acceptance of such increased liabilities; since the mere possession of a locality cannot and does not carry extensive benefits, but may even be a source of danger.

General Barrett was now asked to give his views on these proposals, but was at the same time told that no increase could be made in the size of the force under his command. In his reply Barrett agreed that the occupation of Nasiriya would be desirable, but stated that the protection of the Muntafik Arabs could not be assured except through the occupation of Baghdad, and he said that Nasiriya could probably be taken without resistance on the part of the Turks and Arabs after the capture of Amara.

Information was now received that it was possible that the IVth Turkish Army Corps had been despatched to Mesopotamia from Syria, and that with this corps there were German Officers, motor transport, boats in sections and arms which were to be distributed among the Arabs. A few days later it was stated that the 35th and 36th Divisions had been sent back from Aleppo to Baghdad owing to the fact that a large number of the men had deserted from their units. There were rumours, in addition, of fanatical unrest at Karbala, and of the concentration of Arab levies at Nasiriya and Suk-ash-Shuyukh, where the remnants of the force that had fought at Sahil had rallied, for an attack on

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Basra. It was said too that the units which had retreated from Kurna had moved with 12 guns to Khamisiya and Suk-ash-Shuyukh, but it was also reported that they were still at Ezra's tomb and that the passage of the river Tigris* had been obstructed by the sinking of boats in the fairway a few miles to the north of Kurna.

These reports naturally caused Barrett to modify the opinions which he had previously expressed. The thought of a great advance was set aside, and the capture first of Suk-ash-Shuyukh and then of Nasiriya was advocated much on the same grounds as those that had been set forth by the India Office. (Map 1.)

The result of this correspondence was that Barrett received, on the 29th December, instructions to prepare a plan for an advance on Amara and one also for a forward movement to Nasiriya. But four days later the Viceroy telegraphed to the Secretary of State that as the force in Mesopotamia might soon be opposed by superior numbers of Turks, and as additional troops could not be sent to it from India, a greater dispersion of the group such as would result from the occupation of Nasiriya was not desirable. It was also pointed out that a movement on the part of the British towards Nasiriya might be construed by the Arabs as being a menace to Najaf and Karbala, places which were considered to be holy by the Shiah sect of Muhammadans, and this might arouse fanatical feeling against the British. The Secretary of State concurred in these opinions, and Barrett was then informed that a forward movement was not to be undertaken on either Amara or Nasiriya without reference to the authorities in India.

Transportation, as has been pointed out, is one of the factors which exercise a restraining influence on the scope of all the operations of war, and at the very time when the adoption of a forward policy was being canvassed, the inadequacy of the river transport which was at the disposal of Force D. had become

* The width of the Tigris between Kurna and Baghdad varies from 50 to 700 yards, the average being about 300 yards. The season of flood may be said to continue from March until July or August, and the river is at its lowest in November. The depth in the navigable channel is then about 4 feet 6 inches, but rises to 15 or 20 feet during the inundations, when immense areas of the plain are covered with water, and the stream runs at the rate of 4 or 5 knots. The Euphrates is not navigable during the season of low water above Nasiriya, and only boats of the lightest draft can reach Nasiriya itself.

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strongly apparent, even for the limited object of holding the territory that had been occupied and of securing the free working of the pipe line. If an advance should at any time be judged to be expedient, it was evident, therefore, that the existing resources in shipping would be strained to the breaking point. A definite demand was in consequence submitted to India for the provision of four gun-boats of such draft that they could at all times be used in the reaches above Kurna, and of seven paddle steamers for the movement of troops and supplies.

The substance of the intelligence that was collected during the first half of January 1915, was such as to confirm the news which had previously been received in regard to the movement of Turkish units from the west towards Mesopotamia. But a victory that had recently been gained over the Turks by the Russians in the Caucasus theatre of war might, it was thought, cause a diversion of force to this area; and it was also possible that as a result of this reverse a Turkish force would be recalled which had advanced into Persia to Tabriz, and was creating unrest and anti-Russian feeling in northern Persia. By the middle of the month, however, it had become reasonably certain that some 2,500 troops belonging to the 12th Corps (35th and 36th Divisions) had reached Baghdad, and were being sent southwards by road and also down the Tigris in the ten or twelve river steamers and tugs that were in the possession of the enemy. It was ascertained that units either from this Corps or from some other formation, had appeared to the north of Kurna; and there were rumours that the Turks were moving heavy guns down the Tigris. The total of the enemy's troops that were standing at Ezra's tomb and near Kurna might amount to 6,000, with four or more guns and a few German Officers, under the command of Sulaiman Askari Bey, who was now the Commander-in-Chief in Mesopotamia; and there was, besides the Turks in this district, a force of armed Arab tribesmen. Enemy outposts of armed Arabs had also appeared at Nukhaila and Alawi to the west of Shaiba, but these had been driven away from the vicinity of Shaiba. It was said that there were, in addition, two enemy battalions at Suk-ash-Shuyukh, three at Nasiriya and two at Samawa. As was only to be expected a reaction was in progress

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among the Arabs, there being excitement and anti-British activity in the areas bordering on both Euphrates and Tigris, and in consequence marauding against our posts and camps.

The dispositions of the British underwent, therefore, some alteration, and by the 17th January the 17th and 18th Infantry Brigades had been concentrated at Kurna raising the strength of the garrison to about 6,000 men with 24 guns, besides the personnel in the warships. Another squadron of cavalry was also sent to Shaiba. (Map 3.)

The situation which would arise when the rivers came down in flood was also now a matter for serious anxiety, and vigorous measures, therefore, were taken at Basra and also at Kurna to raise levels of roads, repair sluices and build embankments for the purpose of excluding the waters.

On the 17th January information came in to headquarters at Basra of enemy activity at Kurna. This might, it was thought, mark the commencement of a cautious movement towards the place, which would be attacked after the Turks had placed heavy guns in positions where their fire would oblige our warships to fall back to the reaches below Kurna. It was, on the other hand, possible that the Turks were merely intent on consolidating their positions; but if they were permitted to do so, and should the reports as to the movement of heavy guns down the Tigris prove in addition to be well founded the British would experience great difficulty in evicting the enemy, for they would then not be able to count on the support of the comparatively powerful guns of their naval flotilla.

In these circumstances, and also in view of the general situation and of the increasing boldness of the Turks, Barrett now resolved to make a sally in force from Kurna. It was hoped in this manner both to ascertain the strength and dispositions of the enemy, and to demonstrate to our own troops and to the Turks and Arabs that it was not the intention of the Commander-in-Chief merely to defend the positions that had been prepared by the British. Operations on a large scale were not, however, in contemplation, as it was believed that the enemy's main line

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of defences lay on the northern bank of a wide and unfordable canal, on the southern side of which there was also a stretch of marshland which could not be crossed by our mounted patrols.

The important factor in the information that had reached General Barrett in regard to the movements of the Turkish forces on the Tigris was the report that heavy guns were being floated down the river; for if these were installed within range of Kurna the Turks could render the use of the rivers in its vicinity dangerous for our shipping. This eventuality could only be prevented either by occupying ground nearer to the enemy's positions, when the Turks might be obliged to draw back out of range of Kurna; or the enemy might be attacked and defeated before the arrival of the guns. Under the first alternative the small British force would be scattered, weak everywhere and liable to be defeated in detail; and an advance to these localities would probably result in a battle for which Barrett's troops would not be favourably disposed. As regards the second, the difficulty of approaching the localities which had been occupied by the Turks was not inconsiderable, for deep creeks and canals which were brimming with water crossed the area that extended between the enemy and the British; and, as has been stated, the navigation of the Tigris had been obstructed by the sinking of vessels in the fairway, which might also have been mined.

Nevertheless the British were so placed that more vigorous measures than those which were contemplated by General Barrett would probably have been advantageous. Sir Arthur, indeed, was now in the most difficult of all military situations, having, been thrown on the defensive and obliged to abandon the initiative to the enemy. It was probable that the Turks would shortly assume the offensive, but it was by no means certain whether the attack would be made along the banks of the Tigris, or from the direction of Nasiriya against our base at Basra. On the other hand the British had concentrated the bulk of their troops in the neighbourhood of Kurna, and here the Turks had given the British commander an opportunity of disconcerting their plans. The British, however, could certainly not risk the grave consequences which would inevitably follow from a repulse, and if the topographical obstacles were considered to be such as to render

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the success of an attack on the Turkish positions a matter even of doubt, the most ordinary dictates of prudence would have discountenanced a definite offensive. A third alternative was to encourage the Turks to undertake an attack by an appearance of pusillanimity, but the British would be placed in a more precarious situation if the enemy still proceeded with caution and first placed heavy guns within range of Kurna. In any case it was necessary for Barrett to come to a decision without delay, since the concentration of British forces at Kurna would, if continued, leave the enemy free to deliver an attack against the more weakly guarded western flank at Shaiba; or the heavy rains of winter, which were believed to be imminent, might render offensive operations in the neighbourhood of Kurna almost impracticable by converting the plain into the semblance of a heavy ploughed field.

The sally was duly made on the 20th January, and after some skirmishing, in the course of which about 5,000 Turks were in action and the British were fortunate enough to inflict a serious wound on Sulaiman Askari, Barrett's troops fell back unmolested to Kurna.

Although these operations had perhaps checked any inclination on the part of the Turks to advance immediately towards Kurna, and had to some extent cleared up the situation in its immediate vicinity, the British were still largely in the dark as to movements that might have been set on foot both further to the north and to the west and east. A numerous body of Muntafik Arabs, under a chieftain named Ajaimi, and amounting it was said to be 6,000 men, stiffened by 2,000 Turkish regulars with 5 mountain guns, was reported, however, to be about to advance from Nasiriya against Shaiba; and it was alleged that mahailas (barges) loaded with grain were waiting at Suk-ash-Shuyukh to sail down the Euphrates and supply this force with food. There was also news of restlessness at Ahwaz, from which the British residents were withdrawn on the 29th January; and a large force of Arabs backed by one regiment of Turkish cavalry, one infantry battalion and four guns was rumoured to have reached Bisaitin and to be about to attack either Ahwaz, or perhaps even to advance on Basra from the north-east in conjunction with Ajaimi. Intelligence

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had also come in that the enemy's troops were engaged in entrenching on certain sandhills lying to the north of Kurna; and that there were on the Tigris front, from Kut-al-Amara southwards, now as many as 12,000 Turko-Arab soldiers with 64 guns, 100 Germans and a large gathering of Arabs belonging to the Bani Lam tribe. On the other hand it was stated that not more than 5,000 of these troops were regulars, the remainder being reservists and men of the gendarmerie.

It seemed, in fact, towards the end of January, as if the Turks were engaged in active measures in widely separated localities with the deliberate object both of inducing the British to increase the dispersion of their forces, and also of concealing the direction from which it was intended to strike a vigorous blow.

The defensive measures that were taken by the British to meet this situation were as follows: A battery of 4-inch bullock-drawn guns of old pattern, which had arrived from India, was sent to Kurna. Two mountain guns and a section of Sappers and Miners were despatched to Shaiba, where the defences were improved and it was arranged that an accumulation of ammunition should as far as was possible be made there. An armed launch was stationed at Gurmat Ali at the mouth of the new channel of the Euphrates, for the purpose of preventing native vessels from Basra from passing along it to the enemy. Large quantities of ammunition, and supplies sufficient to maintain the garrison for seventeen days were moved to Kurna; but one British battalion, one Indian battalion and one field battery were held in readiness to leave the place when required, and two river steamers were earmarked to transport them. Finally the small Indian Marine paddle steamer Comet, carrying one 3-pounder gun and three Nordenefidts, and one officer and 30 infantrymen, was sent to Ahwaz in order both to prevent the enemy from crossing the Karun and for the support of the levies that were being raised by the Shaikh of Muhammara. Half a battalion was also placed in a transport, which had recently brought drafts from India raising units approximately to their war establishments, and stationed at Muhammara.

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The military situation in Mesopotamia had now developed in a manner so unfavourable to the British that it was evident that serious risk of disaster would be incurred unless some additions were made to Force D. Orders, therefore, were issued by the Government of India, towards the end of January for the despatch of reinforcements comprising three squadrons of cavalry and the 12th Infantry Brigade. The infantry began to arrive in Basra on the 5th February, when, as it happened Lord Hardinge, the Viceroy of India was making a tour of inspection in Mesopotamia. Two battalions of this brigade were then sent to Kurna, which seems still to have been regarded as the danger point, but in the meanwhile one battalion had been withdrawn from Kurna and moved to the neighbourhood of Ahwaz.

Rain fell heavily in the middle of February for several days, and this downpour put an end for the moment to the possibility of an offensive movement by the enemy. At the same time the Tigris, which had for some weeks gradually been rising, began to cause considerable inconvenience both to the Turks and British at Kurna. The Turks were obliged to move their camps from the left to higher ground on the right bank of the river owing to inundations, and the left bank opposite to Kurna was flooded with the exception of a small area from which water was excluded by means of dams. The track leading from Basra to Shaiba also was now a foot under water and practicable only for pack mules.

Although the number of Turko-Arab troops in Arabistan did not according to the latest estimates apparently exceed 700 men with 2 guns, and owing to the difficulties of transportation was, it was considered, not likely to be increased, the position of affairs on the Karun had shown no improvement since the arrival of the reinforcements. The oil pipe line had recently been cut by the Bavi tribe of Arabs; and granting that it was probable that the Khans of the Bakhtiari might be trusted to safeguard the oilfields on account of the royalties which they received from the Anglo-Persian Oil Company, it seems that the authorities in London had now become apprehensive lest the enemy's propaganda should prevent the repair of the pipe line, by detaching the other tribes of Arabs, who live in the valley of the Karun and are

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nominally dependents of the Shaikh of Muhammara, from their allegiance. The Government of India, however, were averse from the detachment of troops to Arabistan, and justly pointed out that should a reverse be experienced either at Kurna or Basra in consequence of this detachment, the oilfields and pipe line would necessarily fall into the hands of the enemy. Although the authorities at the India Office concurred generally in this statement it was nevertheless stated with equal truth that, if troops could be spared for this purpose, prompt support of the levies of the Shaikh of Muhammara might obviate operations on a far larger scale should they meanwhile have been defeated owing to lack of this support.

Before operations in Arabistan could be commenced certain diplomatic questions must be settled. Arabistan was a province of Persia, and although the Persians had made no attempt to hinder its invasion by the Turks, it would not be politic on the part of the British to act in such a manner as to give the Persians an excuse for taking offence, for owing to fears of aggression on the part of the Russians the attitude of the Persians was in general unfavourable to the Western Powers. On the other hand it was argued that if the Persians were unable to protect their interests in Arabistan, other than the oil fields, they could not do otherwise than aquiesce in the movement of the British for this purpose. On the 14th February Barrett heard that 2,500 Turkish troops had been sent from the neighbourhood of Kurna to Arabistan; and since it seemed likely that, unless the enemy were checked, the Arabs who inhabit the valley of the Karun and also those in the areas lying to the east of the Shatt-al-Arab would go over to the Turks, he decided to reinforce the detachment, and the number of British troops standing near Ahwaz was raised in consequence to 1,500 with 4 guns.

The policy which had now been adopted for the purpose of meeting the difficult situation that had arisen in Arabistan was such as would be grateful to the friendly Shaikh of Muhammara who no doubt was sufficiently acute to perceive that once committed to operations in this area the British would be unable to turn back. It was possible, also, that the presence of a small

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number of British troops might serve to strengthen the allegiance of those Arabs who were wavering, and who in their absence might side with the Turks. On the other hand the less far seeing of the Arabs might be discouraged by the smallness of the force, and the Turks might be trusted to endeavour to take advantage of any opportunity that was afforded to them of defeating weak and isolated bodies of British. The position of affairs was such that since great hazards had been incurred in Mesopotamia grave risks must be accepted on one of its fronts, and since these were not to be faced in Arabistan it would have been preferable to have detailed for duty in this area a force more capable of holding its own.

The situation in other portions of the theatre of war was certainly now such as also to give cause for anxiety. There were reports of the movement eastwards of one or more enemy divisions from Syria; it was not improbable that some 30,000 Turkish troops belonging to the 16th, 35th and 38th Divisions, with from 75 to 100 guns, were at and to the south of Baghdad; and strong religious agitation was in progress against the British in Karbala. Fighting had occurred in Arabia between the forces of Bin Saud of Najd, who was pro-British, and those of Bin Rashid of Hail who favoured the Turks; and the issue had been so far indecisive that neither chieftain was likely to be a serious factor as regards the campaign in Mesopotamia. The rising of the water in the Tigris and the flooding of the plain had, however, somewhat eased the pressure on the garrison of Kurna, as the probability of an attack by the enemy in force had become remote. On the other hand bodies of Turks, Kurds and Arabs had begun more closely to menace the detachment at Shaiba, and our patrols were in constant touch with those of the enemy. The area between Basra and Shaiba was now permanently under water, which in some places was as much as three feet in depth, and this of course increased the difficulty of maintaining communication between them. In addition the channels connecting the middle course of the Tigris and the Euphrates would, it was thought, probably be navigable, and this would facilitate the concentration of troops at Suk-ash-Shuyukh under cover of those that were watching Kurna and Shaiba. The garrison of Shaiba was consequently increased

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to a total of about 3,500 fighting men with 16 guns, and the garrison of Kurna was reduced by approximately one and a half infantry brigades and 10 guns the bulk being placed at Basra. In addition detachments were posted at Gurmat Ali for the purpose of watching the new channel of the Euphrates, and at Abadan so as to secure the refineries against a raid. (Map 4.)

The historian Gibbon has pointed out that "the unpractised student will often be perplexed in the application of the most perfect theory," and the remarkable difference between the situation of the British as it appeared to be on paper, and as actually was the case, cannot but emphasise these practical difficulties of the art of war. On paper the forces at the disposal of General Barrett were so disposed that he could have made certain of gaining a victory by following the example of leaders such as Napoleon and Wellington, and concentrating the larger portion of his troops against one of the widely separated groups of the enemy. Was there, for instance, any reason, on paper, why, in emulation of Napoleon's campaign in 1808 in Spain, Barrett should not have burst through the Turkish centre at Kurna and then have defeated and dispersed the units that formed the two wings? There were, it is true, physical difficulties—flood waters—in the path of a successful advance from Kurna, but difficulties exist to be overcome, they are merely trials to find "persistive constancy in men." Alternatively, why should the British not have collected the larger portion of their forces and then hurled them against either the group that was advancing from Nasiriya or against that which had invaded Arabistan, as Napoleon did in Italy in the summer of 1796 and Wellington in Portugal and Spain in that of 1809? There would certainly have been danger that the remainder of the British troops would meanwhile be defeated, but there is peril—grave peril—in every operation of war, and there is greater likelihood that disaster will result from inactivity than as the consequence of vigorous action and reasoned daring. Difficulties were indeed created in order that they may be surmounted, but there is one difficulty which, in spite of energy, cannot as a rule be overcome quickly—and this difficulty is lack of transport. The transport that had been provided for Force D. may have been, perhaps was, adequate for

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its initial requirements, but it was now woefully insufficient. The troops in fact were securely chained down owing to want of the transport necessary to enable rapid movements to be made either on land or on the water; and it appears that Barrett could now dispose only of a sufficient number of pack and draught animals to enable the small detachment at Shaiba to be supplied with its requirements as regards food and ammunition. Brilliant strategy, therefore, was out of the question.

On the 3rd March a couple of small reverses were experienced by the British; one in the valley of the Karun where they were driven back to their entrenched camp by a large force of Arabs backed by a few Turkish troops; the other near Shaiba, where some of our cavalry were ridden over by a number of Arab tribesmen. Although, as has been pointed out, it was probably lack of transport rather than want of numbers which had handicapped the British previously to these events, it seems that the authorities both in India and at the India Office had, as may well be conceived, displayed a not inconsiderable degree of anxiety as to the situation of Force D., and correspondence had taken place in regard to the despatch of additional troops to Mesopotamia. But, according to the report of the Mesopotamia Commission, the Government of India and the Army Council at the War Office both asserted their inability to provide the necessary units. The former pleaded that: "We are strongly of opinion that we have reached the limit of risk which can be justifiably imposed on the people of India, who pay for the Indian Army;" and again, "India has done her duty to the Empire, and it is quite impossible in view of the situation on the frontier and in interior to do more. It is no use to suggest to us that we should take further risks in India." The War Office, on the other hand, urged that the attack which was about to be made against the Turkish positions covering the Dardanelles could not fail to ease the situation, by compelling the Turks to devote the bulk of their armies to the defence of Constantinople.

The disadvantages resulting from the absence of some central authority which was definitely responsible for the allotment, according to requirements, of all the military forces of the British

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Commonwealth are indeed laid bare in this correspondence; and "The history of the supply of reinforcements to Force D. is a melancholy tale of altercation between London and Simla. Although up to the time of the advance on Baghdad the expedition was always strong enough numerically to cope with the Turkish forces, yet this result was only attained after prolonged wrangling between the Governments at Home and in India, neither of whom appeared willing to accept the task of reinforcing an expedition for which they were jointly responsible. When at the commencement of the campaign the 6th Division was ordered to the Persian Gulf by the Home Government in October 1914, we (the Mesopotamia Commission) cannot find that the India Office or their military adviser, Sir Edmund Barrow, ever contemplated or arranged for its reinforcement from England in case of need, although it was obvious that even if the expedition were successful the Turks would make strong efforts to oust it from Mesopotamia, whilst if it were unsuccessful the need for reinforcements would have been urgent. On the other hand the Government of India adopted the attitude that, having denuded India of troops for overseas expeditions, it was impossible to send reinforcements from India to Mesopotamia. The danger and friction created by such a situation is well exemplified by what happened in the early part of 1915. At that period the military authorities in England and India agreed that the Mesopotamian Expedition was in danger of attack by superior Turkish forces, and its reinforcement by a division was imperative; but the Secretary of State informed the Viceroy that no reinforcements could be despatched from England, and the Viceroy informed the Secretary of State that no further troops could be spared from India. The difficulty was only overcome after much delay and discussion by the Home Government definitely ordering India to send reinforcements to Mesopotamia, and relieving the Viceroy of all responsibility for any consequent danger to India."

The 33rd Infantry Brigade, under Major-General G. F. Gorringe, a heavy bullock-drawn battery of four 5-inch guns, and a Territorial battery of four 5-inch field howitzers, were therefore placed under orders to proceed from India to Mesopotamia; and the War Office agreed to release the 30th Indian Infantry Brigade from work which it had been carrying out in Egypt.

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The immediate result of the reverse which had been experienced on the Karun was that Barrett increased the size of the British detachment near Ahwaz to 3,000 men with 6 guns. The spreading of the floods, (in 1915 these came down somewhat later than was usual, now), however, led to a reduction in the enemy's forces in the vicinity of Kurna, and perhaps also definitely put an end to any project that may have been entertained by the Turks of moving heavy guns to this front. In addition the whole of the Turkish troops were obliged to move to and occupy a series of sandhills lying from one to five miles above this place. A further decrease therefore was made in the numbers of the British garrison of Kurna, about 700 men and six mountain guns being moved down to Basra.

Meanwhile all the information that reached the headquarters of Force D. pointed to the concentration of a force of Turks and Arabs in the neighbourhood of Nasiriya, under cover of a detachment at Nukhaila where advanced depôts were being formed of supplies floated down the Euphrates in mahailas from Suk-ash-Shuyukh. The British had attempted with their larger vessels to hinder this accumulation of stores and food stuffs, but owing to the shallowness of the waters it had not been found possible for the more heavily armed vessels to approach sufficiently near to Nukhaila to bombard it with effect; and the Turks had placed guns in position to protect the place against attacks by our armed launches. It was no doubt owing to shortage of land transport that General Barrett made no attempt to despatch a force from Shaiba for the purpose of destroying the depôts at Nukhaila; and he decided instead to institute a kind of blockade on the Euphrates, which would, it was hoped, check the despatch of mahailas from Suk-ash-Shuyukh. For this purpose a squardron of four small armed steamers, a motor boat and a barge carrying two 4-inch guns of old pattern, was formed, in which were also detachments of infantry and a few sappers and miners. With these vessels an effective blockade of Nukhaila and Ghabishiya was established, and the difficulties that were already being experienced by the enemy in collecting and accumulating supplies were largely increased. The garrison of Shaiba was also augmented by the addition of the head-quarters of the 6th Cavalry

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Brigade which had arrived from India, a cavalry regiment and a battalion.

It is stated in the report of the Mesopotamia Commission that, when in Mesopotamia in the month of February, Lord Hardinge had "had been struck with the necessity of the offensive being assumed by our forces round Basra, if the defensive position was to be consolidated and made secure;" and the result of the actions at Ahwaz and Shaiba may have convinced the Government of India that it was now desirable to ensure that this alternation of attitude should be effected. At any rate, on the 22nd March, Barrett was informed that the troops in, and about to be sent to, Mesopotamia would be formed into an Army Corps under the command of Lieutenant-General Sir John E. Nixon, and that he would revert to his appointment of commander of the 6th Division.

To make a change in the organisation and command of an army at a time when the enemy are actually engaged in developing an important strategical movement is, like the swapping of horses when in the middle of a stream, so evidently hazardous that it is a policy which is not often adopted. Such a step is likely to paralyse the force just when vigorous action may be most necessary, for a leader who is about to be displaced may well hesitate to take such decisive steps as will compromise the actions of his successor; and the new commander may find himself in the invidious position of being involved in a grave crisis before he has had the time which is necessary to enable him to grasp the situation and its possibilities. It is, however, equally true that new measures are best entrusted to new men, and, as pointed out in the Mesopotamia Commission report, Sir John Nixon had "the reputation of a successful and dashing cavalry officer" who "believed he had been sent out in order to make this change in the attitude of the forces round Basra."

That such a change was definitely in contemplation is evident from the instructions that were issued to General Nixon on the 24th March:—

"(1) Your force is intended to retain complete control of the lower portion of Mesopotamia, comprising the Basra

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Vilayat and including all outlets to the sea and such portions of neighbouring territories as may affect your operations.

"(2) So far as you may find feasible, without prejudicing your main operations, you should endeavour to secure the safety of the oilfields, pipeline and refineries of the Anglo-Persian Oil Company.

"(3) After acquainting yourself on the spot with the present situation you will submit :—

(i) A plan for the effective occupation of the Basra Vilayat.

(ii) A plan for a subsequent advance on Baghdad.

"(4) In all operations you will respect the neutrality of Persia so far as military and political exigencies permit."

Sir John was also to report on the desirability of reinforcing the 6th Cavalry Brigade by one regiment of Imperial Service Cavalry ; on the quality and description of the transport required for his operations ; the employment of a light railway ; and the adequacy and suitability of certain river gunboats that were on order, and also of other crafts which were now on their way to Basra.

The first business which devolves on any officer who receives an order is that of analysing its contents, and of ascertaining from this analysis their significance and the intentions of the authorities who issued the order. The special importance of the written instructions which had been given to Sir John Nixon consisted in the fact that his primary object was to "retain," presumably after having gained, the complete control of the Vilayat of Basra, which extended from a point about 30 miles to the west of Nasiriya almost to Kut-al-Amara. (Map 1.) The forward movement that had consistently been advocated by the political officers serving with the force in Mesopotamia was therefore apparently sanctioned by the Government of India, who were it must be supposed, aware of the extent of the Vilayat. On the other hand in the evidence that was given before the Mesopotamia Commission by General Sir Beauchamp Duff, who

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was the Commander-in-Chief in India at that time, and also by General Nixon, it is stated that by the "occupation of the Basra Vilayat" was meant the occupation of Nasiriya and Amara, and that Sir John was so informed when at Army Headquarters in India. As will be shown in the subsequent course of this narrative, a more literal interpretation of the text was, however, afterwards adopted. It appears, further, that it was only on the 2nd May that these instructions were received in England; although something in regard to their tenor was probably known before that date, since a reference to the defence of the Basra Vilayat was made by the Secretary of State, India Office, in a telegram which was sent to India on the 24th April.

Whatever their meaning some exception may be taken against the wording of the instructions that had been issued to Sir John Nixon, for although it may sometimes be necessary to indicate to a commander a geographical objective, such a necessity could only have arisen in this particular case if a definite assurance could have been obtained that the occupation of an area would produce a great political advantage, such as radical change in the attitude of the various tribes of Arabs in our favour. The interpretation that was to be given to the orders had certainly been explained to General Nixon, and there was a saving clause in them as regards neighbouring territories. On the other hand an attempt to occupy effectively the Vilayat of Basra could not have failed to have placed the British army in a difficult position; unless, which was improbable, the boundaries of the area had been fixed from a military not from an administrative standpoint; and the indication even of the geographical points of Nasiriya and Amara is open to similar criticism. On the other hand it may be claimed that, at this period, the true objective of the British commander was to secure the military position of his force, subject, so far as might be practicable with the troops that had been placed at his disposal, to the political and military requirments of safeguarding Basra and the oil fields. It is suggested, in consequence, that the orders which were issued to General Nixon should preferably have been drawn up in this sense; and it should have been left to him to decide the geographical areas that must be occupied in order to effect these purposes.

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The military situation on the 9th April, the date of Sir John Nixon's arrival in Basra, was as follows: The dispositions of the British, subsequent to the period when numerical weakness had necessitated the suspension of the advance and the abandonment of the strategical initiative, had largely been governed by the actions of the Turks. As a result detachments had been thrust out to a distance, as regards the time in which reinforcements could reach them from the central force at Basra, of about 72 hours in the case of Ahwaz, 10 hours in that of Kurna and 5 or 6 hours as regards Shaiba. But the slow movements of the Turks, which may have been due partly to administrative inefficiency, partly to physical difficulties and lack of transport, and in part to the fact the Commander-in-Chief Sulaiman Askari had been wounded had enabled reinforcements to be brought to Force D. The tension in respect of the security of Basra and the communications with the Persian Gulf had thus largely been relieved. (Map 5.)

Since the affair on the 3rd March the enemy had remained passive on the Karun front, except for a weak demonstration on the 31st when a few shells were fired at the British camp. The Turks, it was said, had endeavoured to enlist assistance from the Persian Vali of the Pusht-i-Kuh tribesmen but without success; and the Turkish commander, Muhammad Daghestani, an elderly and somewhat apathetic person, had reported that his force was not sufficiently powerful to give him warrant for the assumption of the offensive. In spite of the difficulty of moving troops from Amara round the flooded areas, reinforcements had, however, been sent to Arabistan, which had raised the strength of the Turkish force to one or two Turko-Arab cavalry regiments, eight or nine weak Arab battalions officered by Turks, and from eight to ten guns, or perhaps at most 8,000 fighting men; and the force had, it was reported, been joined by a few German officers. The number of Arab tribesmen in the field in this quarter against the British was fluctuating, and increased or diminished according as it appeared that the scales of victory would incline towards the Turks or British. The maximum number that might be encountered did not, however, exceed 15,000, the majority of whom were armed with rifles, while one-fifth were mounted. The friendly levies of the Shaikh of Muhammara had begun to drift away after our reverse on the 3rd March, and might, it was thought,

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disperse altogether. On the other hand, the British garrison had again been reinforced, and now consisted of five battalions, a field battery and other troops, or from 3,500 to 4,000 fighting men.

The strength of the Turkish forces that were facing Kurna had at one period been estimated as amounting only to four weak battalions, with 5 guns and 2,000 Arab auxiliaries. Early in April, however, the enemy had disclosed four 15-pounder field guns in position on a sandy ridge lying within range of our post, and their fire had caused damage to the sloop Espiègle. Infantry had also been pushed to sandhills standing nearer to our lines, apparently with the object of protecting these guns, and there were still reports as to the despatch southwards of heavier weapons from Baghdad.

On the line of the Euphrates the Turks had been steadily moving troops forward towards Shaiba, but it was reported that our blockade of the river had caused a body of Arabs, who were short of food, to carry out a tumultuary demonstration, at 8 A.M. on the 1st April, to a point about 5 miles to the north-west of Shaiba; but a dust storm then arose, and when the wind had subsided it was found that the enemy had disappeared. A couple of days later there was also a movement as if it were intended by the enemy to menace the communications between Shaiba and Basra. It was now estimated that the force, which was under the direct command of Sulaiman Askari, comprised two divisions, one Turkish reserve, the other Turko-Arab, and a cavalry brigade, and amounted to about 12,000 fighting men with 24 to 30 guns, none of modern pattern. The main body was moving slowly forward from Nasiriya, the advanced troops were at Nukhaila together with some German Officers, and it was supposed that the Turks would be supported by 1,200 mounted and from 6,000 to 8,000 unmounted Arabs under the leadership of Ajaimi, and also perhaps by 1,000 Kurdish irregulars.

The British garrison at Shaiba had, on the other hand, been reinforced by three battalions of the 18th Infantry Brigade and other troops, and therefore now included 8 battalions, 8 squadrons, 11 field guns, 6 horse artillery guns and 6 mountain guns, or some 7,000 troops. At Basra there were 8 battalions and 11 guns, and

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it seems that these troops were still held back from the front owing to the difficulty of sending large quantities of food across the inundated areas to Shaiba.

The political situation in Persia was not without elements that might influence the position in Mesopotamia. Reports had lately been received of unrest at Bushire which was due to the activities of the German consul, and there were rumours that Turkish troops had advanced from Baghdad towards Hamadan. These movements if continued might, at best, involve the despatch of troops to the Persian Gulf for the purpose of safeguarding British interests, and consequently a reduction in the numbers that would be available to deal directly with the Turks; and at worst Persia might take part in the war as an ally of the Central Powers, which might involve the British hostilities with the powerful Bakhtiari, and also with the tribesmen of the Pusht-i-Kuh as well as on the shores of the Gulf. In addition an adverse effect might be produced on the Afghans and on the tribesmen living on the North-West Frontier of India.

It seems that the movements and dispositions of the enemy forces in Mesopotamia and its vicinity, as outlined above, had led the General Staff in India to suppose and to telegraph to Nixon, that an attack on Basra from the west was in contemplation simultaneously with an advance to the Karun, in spite of the difficulty of co-ordinating the manœuvres of two groups which were operating on a frontage of about 300 miles in an undeveloped country. It was believed that the movement to the Karun was to be undertaken for the purpose both of exerting pressure on the Persians and of punishing the Shaikh of Muhammara. On the other hand, it was pointed out that Muhammad Daghestani was an elderly man and hostile to the Young Turk party who were paramount in Turkey and to whose side Sulaiman Askari was attached; and that Daghestani's force was in difficulties as regards supplies of food.

It has been suggested that while Sir Arthur Barrett could not with propriety adopt the offensive after the announcement in regard to a change in the command of the troops in Mesopotamia, Sir John Nixon equally would not be in a position to effect radical changes immediately on his arrival. The enemy, therefore,

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owing to the procedure that had been followed by the Government of India, had in fact been given freedom to take such steps as they desired. Actually but little harm was done, for the Turks neither altered their dispositions nor accelerated their movements, and since reinforcements had meanwhile reached the British, they could well afford to remain passive with the object of inducing the enemy to commit themselves to the attack of entrenchments that were held by troops who were not only better armed, but were of superior quality.

The Turks and Arabs soon afforded to the British an opportunity of demonstrating their superiority, for about 12,000 regulars and 11,000 tribesmen advanced, on the 11th April, against the force which was holding Shaiba. After repulsing an attack which was delivered on the 12th, the British sallied out of the place on the 13th, and finally defeated the Turks after a severe struggle on the 14th April. The Turks then retired in such disorder that only about 6,000 or 7,000 regulars reached Khamisiya a week later in a state of confusion and with little ammunition, and during the retreat Sulaiman Askari committed suicide. Meanwhile nothing more than feeble demonstrations had been attempted against the British detachments on the Karun and at Kurna.

As soon as it was evident, that the victory of Shaiba had not only removed a dangerous menace from the communications of the British down the Shatt-al-Arab, but had also regained for them freedom of manœuvre and the initiative, the question arose as to the use that could now best be made of these advantages. On the 31st March Sir John Nixon had received from the Chief of the General Staff in India the review of the situation mentioned above, the concluding paragraph of which was as follows: "Once your light draught steamers reach Basra, it is hoped that your river transport will enable you to assume the offensive against these separated Turkish forces. If there is no change in the Turkish numbers and dispositions, it is thought that an opportunity should present itself of concentrating your forces in such a way that you will be able to defeat them piecemeal."

Having this suggestion doubtless in mind it seems that, as soon as the results of the battle of Kurna had become fully apparent, Sir John Nixon had come to the conclusion

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that no one of the three groups of Turkish troops was now capable of assuming the offensive with effect. On the other hand, it was thought that, unless attacked, the enemy would probably maintain and entrench strong positions both in Arabistan and near Kurna and Nasiriya. To follow an elementary precept of the art of war and to pursue the Turks and endeavour to disperse them or at the least to drive them beyond Nasiriya and the boundary of the Basra Vilayat, was not at the moment practicable owing to the limiting influence of the factor of transportation, for a larger quantity of transport than was even now available would be required for an advance by land. Although several paddle steamers were on the way from Burma, the arrival of which would probably enable a sufficient force to be moved by river to Nasiriya, only one or two of the vessels had actually as yet reached Basra, and the British were still without definite information as to the navigability of the various channels into which the Euphrates is split up below Nasiriya. The garrison of Kurna was at the moment not in any danger, and it was as yet doubtful whether, owing to the flood waters which covered all the plain in its vicinity to a depth of two feet or more, an attack on the enemy's positions on the sandhills to the north of the place was feasible. A rapid advance to Amara following on a victory at Kurna would certainly sever the best line of communication of the Turkish force in Arabistan, and would doubtless cause the enemy to evacuate this area. But since the whole country for some distance above Kurna was also under water, the advancing troops must be carried in steamers and barges, and again neither were available in sufficient numbers for this purpose. On the other hand, a portion of the shipping that was employed by Force D. depended for fuel on the oilfields of Maidan-i-Naftu, and the Admiralty also were pressing for the repair of the pipe line and for the safeguarding of the wells. Moreover, to clear Arabistan was not only a military requirement owing to the threatening attitude of the Turko-Arab forces in the vicinity of Ahwaz, but was desirable in the political sense; for the continued presence of the Turks would not only confirm the unfriendly Arabs in their hostility, but might arouse the Bakhtiari who had already been subjected to German propaganda, against the British, and through them the rest of the Persians.

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In addition operations in this district were within the scope of Sir John Nixon's resources in the matter of transport, for some troops could march with land transport up the valley of the Karun, and there was sufficient shipping for the transportation of the others and also for the movement of supplies. It was decided, therefore, to ferry a force over to the left bank of the Shatt-al-Arab at Basra, so that an advance for the purpose of joining hands with the detachment that was standing near Ahwaz could be undertaken whenever this was judged to be desirable.

In view of our experiences during the month of April some addition to the number of the mounted troops operating in Mesopotamia was now thought to be necessary; and a request was made, therefore, to the Government of India for the services of another cavalry brigade in which a regiment of British cavalry (none were at this time serving with Force D.) should be included. A battalion of Pioneers was also demanded, as the work of fighting the floods, removing obstructions in the rivers and erecting huts in which to obtain shelter during the hot weather was both urgent and most arduous.

These requests were refused by the Viceroy with the approval of the Secretary of State, who telegraphed on the 24th April :— ". . . . with reference to Nixon's request for a cavalry brigade, I concur in your decision as, apart from the impossibility of complying, the approach of hot season renders despatch of more troops, especially British, inadvisable. Nixon's demand implies intention on his part of important offensive movement. I presume he clearly understands that Government will not sanction at this moment any advance beyond present theatre of operations. We must confine onrselves during summer to defence of Basra Vilayat and oil interests in Arabistan. If after smashing enemy in Karun direction, it is possible to advance to Amara with a view to establishing an outpost which will control tribesmen between there and Karun and so contribute to security of pipe-line, I should be prepared to accept such a proposal provided it is supported by you, but I deprecate any plan involving undue extension and possible demands for reinforcements. Strategically, our present position is a sound one, and at present we cannot afford to take risks by unduly extending it. We must play a safe game in Mesopotamia."

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That the policy set forth by the Secretary of State should differ in spirit both from, that which had been disclosed by the Government of India in the orders issued on the 24th March, and from the verbal instructions that had been given to Sir John Nixon in regard to these orders, was probably due to the fact that the orders had not yet reached the India Office; but it is a further example of the necessity for a centralised and not a divided responsibility in time of war.

Meanwhile Sir John Nixon had definitely decided to drive the enemy from Arabistan, a task which was confided to General Gorringe with a force of about 10,000 fighting men and 23 guns. Gorringe successfully completed the work by the 28th May, in spite of difficulties arising from intense heat and the passage of rivers that were in full flood; and part of his force was then at Bisaitin on the route from Arabistan to Amara.

During these operations Major-General C. V. F. Townshend had assumed the command of the 6th Division in place of Barrett who had been invalided, and after careful study of the tactical situation at Kurna had submitted a daring plan for an attack on the enemy's positions. On the 17th May Sir John Nixon had also telegraphed to India a review of the situation, and in this it was stated that, while lack of shipping still rendered impracticable an advance on Nasiriya, which was now held by only 1,500 regular troops, an attack would be delivered on 2,000 Turko-Arab regulars who with six guns were in position on the sandhills to the north of Kurna. This attack would be followed by an advance to Amara.

On the 23rd May the Secretary of State, who had now received notification in regard to the intentions of Sir John Nixon, gave formal sanction to this project. But the permission was granted subject to the reservation that Nixon would, in case of success, be able without reinforcements from India or elsewhere to hold Amara against any offensive that might be made from the direction of Baghdad during the season of low water on the Tigris. It was added, as an instruction for general guidance, that "questions jointly involving civil and military policy should under present circumstances only be decided by the Cabinet."

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At the end of May the Earl of Crewe was succeeded as Secretary of State, India Office, by Mr. Austin Chamberlain, and the latter then telegraphed in much the same vein that, "Our policy must depend on local factors, forces locally available, and resistance expected and partly on situation elsewhere . . . .;" but he finally acquiesced in Sir John Nixon's plans of action.

On the 31st May General Townshend, at the head of 7,500 men with 25 military guns, gained a remarkable and almost bloodless success over about 3,000 Turks and 1,200 Arabs at Kurna, with the effective assistance of a naval flotilla consisting of the two sloops and other vessels. A very bold and vigorous pursuit, undertaken with a handful of men in the smaller ships of the flotilla, carried him for a distance of 90 miles to Amara. Here, on the 3rd June, he not only captured the town of 10,000 inhabitants but also more than 800 troops and in all the losses of the Turks reached the total of 120 killed and wounded, 1,773 prisoners, 17 guns, the gunboat Marmariss, two steamers, three tugs and a number of lighters. In addition a body of troops belonging to the Turkish force from Arabistan, who had just reached Amara, were dispersed, and these and the remnants of the detachment that had fought at Kurna were again driven headlong up the Tigris.

The astonishing victory which had been won by General Townshend necessarily stimulated the advocates of what may be termed the forward policy. Some attention, therefore, was again directed to the problem as to whether an advance should be made to Baghdad. This question was taken up by the General Staff in India both on account of reasons such as the possibility of joining hands with the Russians whose troops were now to the south of Lake Van and some twenty days' march from Baghdad, and in order that Sir John Nixon's army might take advantage of the local weakness of the enemy, who had lost at least 5,000 men and 17 guns since the 13th April, and also of their pre-occupation in meeting our attacks against the Dardanelles and those of the Russians in Asia Minor, to establish itself on the short and defensible front between Baghdad and Faluja. This line, it was supposed, could be firmly held if a reinforcement of even two or three infantry brigades were sent to Mesopotamia,

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Further, it was anticipated that, after the occupation of Baghdad and Faluja, it would no longer be necessary to undertake operations against the enemy's forces (apparently from five to six battalions with a few old guns) that were still standing at Nasiriya, as these would then be automatically cut off from the remainder of the Turkish army; and the occupation of the country bordering on the lower course of the Euphrates could be carried out whenever convenient.

On the 10th June a telegram was sent to Nixon from India in which he was asked to submit the plan, for the effective occupation of the Basra Vilayat, to which reference had been made in the third paragraph of the instructions given to him on the 24th March. Sir John at once replied that preparations were being made for an advance to Nasiriya, and that it was considered that the occupation of Kut-al-Amara would strengthen our position as we should then be in possession of each end of the Shatt-al-Hai.

A fortnight latter Sir John forwarded in addition to India a memorandum in regard to the occupation of the Basra Vilayat. In this it was pointed out that if a British force were placed at Kut-al-Amara a considerable measure of protection could indirectly be given to Nasiriya. The garrison of this place could then be reduced, since physical difficulties alone would probably prohibit an offensive on the part of the Turks down the valley of the Euphrates. Further, such a movement was unlikely to be made so long as the British could at any time deliver an effective counterstroke from Kut in the direction of Baghdad. On the other hand if the Turks held Kut-al-Amara and were able to concentrate their forces there, they could from this central position menace both Amara and Nasiriya, and could in consequence oblige us to divide our forces so as to hold both places in strength adequate to insure the safety of the garrisons. Once established at Kut-al-Amara the British would not only have prevented this development, but would also have placed themselves between the powerful Bani Lam tribe, who live in the areas to the north of Amara and the Turks, and could therefore render enemy propaganda among the men of this tribe less efficient. In addition the Shatt-al-Hai, which was now known to be navigable by

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steamers sailing from Kut-al-Amara only as far as Shattra, would definitely be closed to enemy traffic, and quantities of corn could be obtained from the areas on its banks. Sir John, however, observed that against the policy of advancing to Kut-al-Amara was the fact that the line of communication along which supplies must be moved would be drawn out for a distance of 153 miles, and this area must be securely guarded. Troops that might be saved from the garrison of Nasiriya could perhaps be used for this purpose, and the difficulty of navigating the stretch between Amara and Kut-al-Amara was not serious.

On the 22nd June sanction was given by the Government of India for an advance against Nasiriya, and while Townshend was consolidating the position at Amara General Nixon had already taken steps for the concentration of a force for this purpose. The transference of troops and their requirements from one locality to another is proverbially a task involving both expenditure of time and immense effort. In spite of every endeavour General Gorringe, to whom the command of the force had been given, was in consequence not able to make a start until the 26th June. (Map 6.) He then sailed, under escort of a naval flotilla, up the old channel of the Euphrates from Kurna with a small force of 2,800 men and 12 guns, the numbers were low owing to the prevalence of sickness among the troops. Suffocating heat and great physical difficulties were encountered which affected the health of the men, the Turks were found to be in unexpected strength and spirit, and Gorringe was obliged to ask for a reinforcement of 1,200 men and 2 guns. These, however, proved to be insufficient to evict the enemy; and under Nur-ud-din Pasha, who had assumed the command of the army, the Turks both moved men from Kut-al-Amara to Nasiriya, and also showed considerable activity against the naval patrols with which the British had endeavoured to keep in touch with the enemy and to control the tribesmen inhabiting the banks of the Tigris above Amara.

A commander who, like Sir John Nixon, is engaged in delivering an attack at one extremity of a wide frontage, must evidently attempt to hold fast the enemy's troops in other localities if he is to prevent their transfer to the theatre of fighting; and should this removal of force occur, the possibility of defeat

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in detail must be faced unless reinforcements can quickly be sent to the threatened front. General Nixon therefore at first contemplated an attack on Filai Fila, the Turkish garrison of which was estimated to amount to about 2,500 or 3,000 infantry, 700 cavalry, some guns and a variable number of Arab tribesmen. After examining the problem of transportation it was, however, found that the number of steamers available was not sufficient to allow of the maintenance of the force under Gorringe, which had already become difficult owing to the subsidence of the flood waters, as well as the movement of troops up the Tigris. Nixon, therefore, was obliged to conform to the operations of the enemy, and again send reinforcements to Gorringe. (Map 1.)

In the end General Gorringe, whose detachment then amounted to 4,600 effectives with 20 guns besides those in the naval flotilla, inflicted a severe reverse on the 24th July on an equal number of Turko-Arab soldiers and a crowd of Arab tribesmen. There was hard fighting in which our losses amounted to about 500, but the British captured 950 of the enemy as well as all their artillery, 15 guns, and also afterwards occupied Nasiriya.

So complete a victory at once changed every aspect of the situation. The Turks began to draw back their advanced troops up the Tigris, and by the end of July it was believed that only 400 cavalry with 4 guns were at Filai Fila, a small detachment and some shipping* at Ali-al-Gharbi, and about 5,000 men in a position known to the British as Es Sinn, which was a few miles below Kut-al-Amara. By means of aerial reconnaissance—a few aeroplanes of old pattern had joined the force shortly before the battle of Kurna—it had meanwhile been ascertained that Samawa and Shattra were both clear of the enemy forces that had fought at Nasiriya; but, according to the reports of agents, some of the units from these forces had rallied on a column which had been sent from Kut-al-Amara to their assistance down the Shatt-al-Hai. It was computed, however, that there were now in Mesopotamia not more than from 10,000 to 12,000 Turkish and Arab troops, with 21 guns; and it was believed that these belonged to three divisions, the 35th, 2,000 strong, which had fought at Nasiriya, the 38th standing at Kut-al-Amara, 5,000 men with

*The Turks apparently possessed six river steamers and one armed tug.

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19 guns, and the 37th Reserve Division, about 3,000 men with 2 guns, which was at and near Baghdad. It was also reported that a large proportion of the Turkish force consisted of such second rate elements as gendarmerie, reservists and recruits. On the other hand rumours were again current that reinforcements had been sent to Mesopotamia both from the west and from the forces that were engaging the Russians in Armenia. It was also said that a Turkish detachment was now standing at Khanikin on the border of Persia, which might be withdrawn and sent to oppose the British on the Tigris.

The condition of military affairs was now so favourable for the British * in Mesopotamia as inevitably to arouse again the onward feeling; and on the 27th July the Viceroy telegraphed to the Secretary of State that: ..... "Now that Nasiriya has been occupied the occupation of Kut-al-Amara is considered by us to be a strategic necessity. Kut-al-Amara is only four miles beyond limit of Basra Vilayat; it commands the lower reaches of the Tigris and also the Euphrates by way of the Shatt-al-Hai, and its occupation will facilitate the reinforcement of our position on either river and also enable us to control the powerful Bani Lam tribe and effectively safeguard the oil fields against aggression from the Tigris. Once securely in possession, we could probably reduce our garrisons at Nasiriya and Amara and thus economise our troops ...." In order to compensate for the diminution of force which had occurred owing to the prevalance of sickness amongst the troops, and also for the despatch of a battalion to Bushire, the suggestion, however, was then made that the 28th Infantry Brigade should be moved from Aden to reinforce the army in Mesopotamia. In a letter to Mr. Chamberlain, dated 30th July, Lord Hardinge also stated that both he and the Commander-in-Chief had at first been averse from the occupation of Kut-al-Amara, but that it had now been made clear to them (by the memorandum which had been drawn up by General Nixon and had reached India on the 6th July) that this would enable us to consolidate our position in Mesopotamia.

* Their fighting force amounted to about 15,000 men with 57 military guns.

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It is of course a military principle that, in a review of the situation, the arguments in favour of and against any particular course of action should first be set forth in logical sequence; and, after consideration of the various alternatives and also of the counter measures that may be adopted by the enemy, the summing up should lead to a reasonable conclusion. What may be gained through any particular course should, however, -noob templated rather than what must inevitably be risked in its achievement. In every problem the extent to which opinion will coincide with reality will depend, clearly, in the first place on the accuracy of the data that are available, and the power of perceiving facts as they are and not as it is desired that they should be, and then on the relative value which is accorded to each item. The advantages, therefore, that are held by a critic after the event are that the information at his disposal is, as a rule, in many respects more exact than that which was available before action was commenced or opinion formed, the facts of the situation are but little distorted, and the results of such action as was taken are manifest. It may be pointed out, in this connection, that at this time little was known in regard to the topography of the district lying round Kut-al-Amara, and this therefore did not weigh in the scales either in favour of or against an advance to this place.

The very definite opinion expressed by the authorities in India and Mesopotamia that to occupy Kut-al-Amara was a strategic necessity was apparently based on the belief that the Shatt-al-Hai was permanently navigable by steamers at any rate between Kut-al-Amara and Shattra. It seems also that the difficulty of feeding a British force as far forward as Kut-al-Amara was underestimated, for the 21 small river steamers and tugs that were at the disposal of Sir John Nixon were already barely adequate to secure the maintenance of the troops. Even allowing that the minds of those who formed this opinion as to the importance of Kut-al-Amara were influenced by these views it is difficult for the following reasons to endorse their judgment.

It was not proposed that the British should evacuate Nasiriya after the capture of Kut-al-Amara, since it was considered that the former must be held both for political reasons and also in

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order to hinder the concentration of forces of Arabs for the purpose of raiding our base at Basra. When studying a map it is certainly evident that a Turkish force standing at Kut-al-Amara is placed centrally in respect of British groups holdings Amara and Nasiriya, each of which would be about 100 miles by road distant from Kut-al-Amara. If it could be assumed that the Shatt-al-Hai was navigable as far as Shattra—actually it is as a rule closed to traffic from the middle of July until January owing to the absence of water in its bed—such a force could, it might be contended, concentrate against one of the groups of British and defeat it before the other could come to its assistance. Granted this advantage, an attack on what would necessarily have been the weaker detachment at Nasiriya, because placed on the less direct and practicable of the routes leading from the north to the base of the British at Basra, would in actual fact have involved the enemy in grave risks; since owing to the difficulty of navigating the Euphrates, and also to the doubtful attitude of the tribes of Arabs that inhabit its banks, the communications of a Turkish force engaged in such an expedition would have passed through Kut-al-Amara; and they would therefore have been exposed to a counter-attack on the part of a powerful British group advancing up the Tigris from Amara. It is true that, in July, the Turks did send troops from Kut-al-Amara against the detachment under Gorringe, and that the British did not counteract this movement by pushing forward up the Tigris. But the circumstances were then different, the Turks were in possession at Nasiriya, and Nixon had been obliged to use a large portion of his transport for the maintenance of the force that had been sent to evict them. Whereas if the British were holding Nasiriya and were attacked by the Turks, it would be the British forces on the Tigris that would be mobile, while the mobility of the Turkish troops on this front would have been sacrificed to enable operations to be undertaken against Nasiriya. It seems, then, that adequate support would indirectly have been given to even a small garrison holding Nasiriya by the presence of a mobile force at Amara. Some reduction in the number of troops occupying Nasiriya could no doubt have been made after the capture of Kut-al Amara, and the position of the British on the Tigris would to this extent have

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been strengthened. On the other hand, the line of communication of a British group standing at Amara would have been shorter by 153 miles of river than if occupying Kut-al-Amara; and as every yard of river was a potential sphere of hostility, this stretch must probably be garrisoned and must certainly be patrolled. In addition, the Turks when driven above Kut-al-Amara would be within comparatively easy reach of their advanced base at Baghdad; and as the country here is drier during the season of flood than that along the lower portion of the Tigris, they would be able to make greater use of land transport, their mobility would be increased and a larger force could be kept in the field.

Further, such indirect protection as could be afforded to the oil wells at Maidan-i-Naftun from Amara, which lay on the easiest route from the Tigris to Arabistan, would at least be as effective as that which could be given from Kut-al-Amara; and the real interests of the British in the Basra Vilayat would be more effectively secured from Amara than from Kut-al-Amara, since the position of the British forces would be less exposed, and the Turks would be obliged to expend a larger proportion of such forces and resources as were available in moving to attack them. The capture of Baghdad from an advanced base at Amara would, it is true, have required more time than if a force for this purpose had been concentrated at Kut-al-Amara; but the occupation of Baghdad was not at the moment a primary consideration, and the measures that were to be taken by the British were advocated for the purpose of consolidation and defence, not for offence. Another objection, as shown by the event, against the holding of so advanced a position as that at Kut-al-Amara, was its proximity to the coveted goal of Baghdad. Pursuit after a successful battle at Kut-al-Amara, and few enterprising leaders would be content with the barren success that is generally gained when pursuit is not undertaken, would inevitably have carried the British to the neighbourhood of Baghdad; and a second success would have involved the occupation of the city with all the consequences that this would have entailed. For once in Baghdad policy, prestige and also the security of the army would have forbidden withdrawal; and the British would, therefore, have been obliged, irrespective of other commitments, to have incurred the

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expenditure of resources necessary to consolidate a position in a locality where operations could at best exercise only a remote influence on the outcome of the war.

It seems, then, as if the advantages of a forward thrust to Kut-al-Amara were much outweighed by the disadvantages that would then be experienced; and that the "safe game" would have been to have been content with our conquests.

While this question of policy was under consideration, General Nixon had taken measures to meet the immediate situation on the Tigris; and orders had been sent that a detachment from the troops at Amara was to make a gradual advance up the river, securing each locality as it was occupied and gaining and keeping touch with the enemy. For the moment the forward movement was, however, not to be prosecuted beyond Ali-al-Gharbi, which is 50 miles from Amara by road and about the same distance from Kut-al-Amara. (Map 7.)

The Secretary of State was not long in answering the Viceroy's proposal in regard to the occupation of Kut-al-Amara, and telegraphed on the 30th July that, as neither the brigade at Aden nor any other reinforcements could be made available for employment in Mesopotamia, a cautious policy must be pursued there. The immense importance of Kut-al-Amara, he said, was not overlooked, but for political reasons we must continue to hold as outposts Bushire and Ahwaz. A somewhat different note, nevertheless, was then sounded, and information was requested as to the dispositions that were to be made after the capture of Kut-al-Amara, and as to whether the evacuation of Nasiriya, which was stigmatised as an unhealthy outpost, would then be practicable. "Please," said the Secretary of State in conclusion, "let me have your views before any decision is taken."

This telegram, except the sentence as regards the despatch of reinforcements, was communicated to Sir John Nixon, who cabled to India a couple of days later that he had always emphasised the advantages which would be gained by concentrating force at Kut-al-Amara, and that its capture would be undertaken only after a methodical advance, and not by a sudden stroke. It would, he observed, not be possible to reduce the garrison of

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Nasiriya until Kut-al-Amara had been gained; and even then a detachment must be kept there in order to assure our power of controlling the Arabs who inhabit this area. But the climate of Nasiriya was not unfavourable, and communication with the place could be assured by means of a light railway. Troops could be withdrawn from the Karun if satisfactory terms as regards the protection of the pipe line were made with the Bakhtiarí and Bavi tribesmen. But if, as the result of German intrigue, Persia became hostile to the British, a large force would be required for the security both of Maidan-i-Naftun and the pipe-line. At the conclusion of the advance a brigade would be stationed at Nasiriya, two brigades at Kut, one brigade at Amara, one brigade between Amara and Basra and one brigade at Basra.

In transmitting this telegram to the Secretary of State the Viceroy signified his concurrence with the views expressed by Sir John Nixon. It was added that an advance on Kut-al-Amara would be authorised as soon as Nixon notified that his preparations had been completed. If supplied with drafts sufficient to maintain the British units of his force at their war establishment, and not obliged to detach a larger force to Arabistan, Nixon would be able, with the troops at his disposal, to retain possession of Kut-al-Amara. Not long afterwards General Nixon enquired whether the proposals which he had made as regards the occupation of Kut-al-Amara were to be modified. He was informed that the Government of India had no such intention, and that, so long as satisfactory arrangements were made with the tribesmen as regards the pipe-line and oil fields, there seemed to be no reason for the retention of a detachment at Ahwaz. This decision was endorsed by the Secretary of State on the 20th August.

The authorities, therefore, had seemingly yielded to the influence which so often impels men to endeavour to avoid the drawbacks of the existing situation by encountering dangers which cannot, in the nature of things, so accurately be assessed. They were about to exchange the solid advantages of a comparatively short line of communication with the sea, on which the British Commonwealth is based, for those which might be obtained by the occupation of an inland geographical point, approachable only over long stretches of river which flowed through areas



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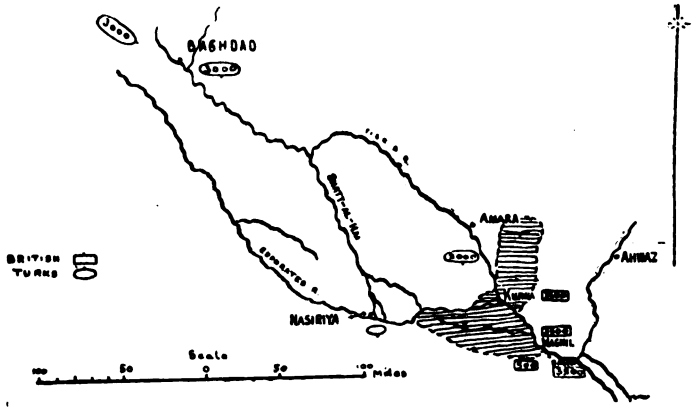
Map 1.



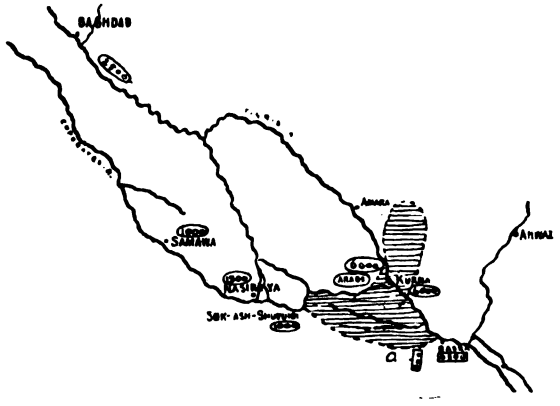
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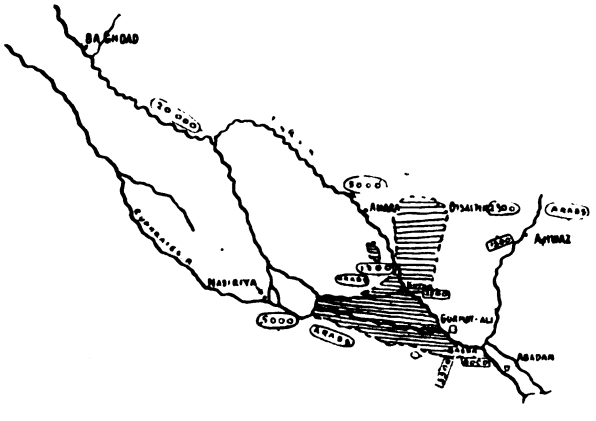
General situation middle of December 1914. Map. 2.



General situation middle of January, 1915. Map. 3.



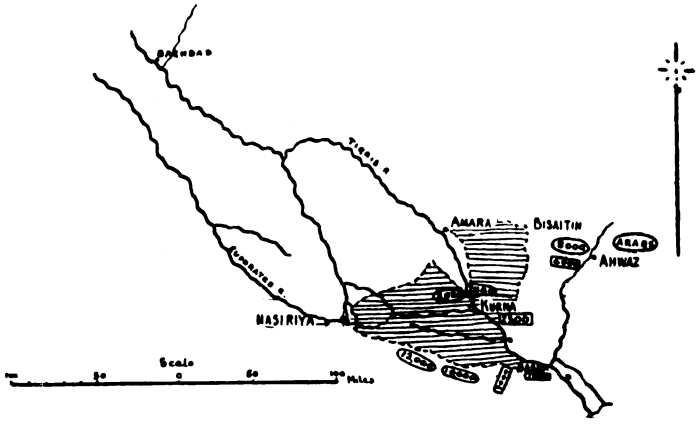
General situation middle of February, 1915. Map. 4.



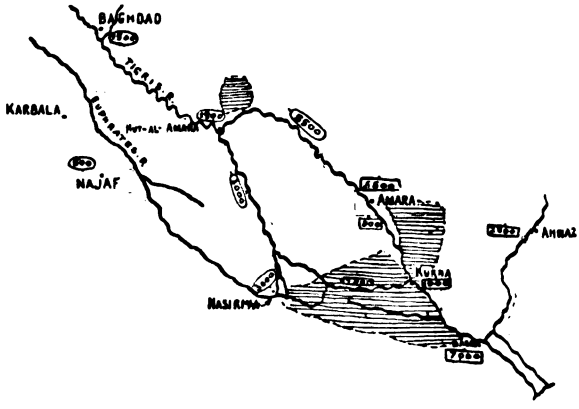
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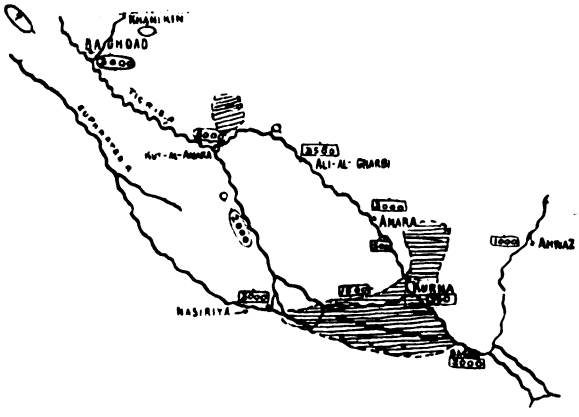
General situation early in April, 1915. Map. 5.



General situation end of June, 1915. Map. 6.



General situation end of July, 1915. Map. 7.



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inhabited by fickle and wavering tribesmen. Certain moral advantages would be gathered from the movement forward, but unless the advance were again renewed these would soon be lost; and, as already pointed out, the concentration of Turkish forces to oppose Nixon's army would be easier after the advance, for the distance to be traversed for this purpose would be shorter. It is true that, at this period, the forces of the Turkish Empire were fully occupied both in the defence of the Gallipoli peninsula against the incessant pressure of the British and French, and in that of Asia Minor against the armies of the Russians; and it was therefore unlikely that large numbers could be spared for the restoration of the fortunes of the Turks in Mesopotamia. Nevertheless the policy adopted by the British in undertaking the conquest of territory as large as England, and inhabited by turbulent tribesmen, with a force of from 16,000 to 18,000 fighting men (a number of men who had been sick had now recovered and rejoined their units), a few sloops and armed steamers, and, although demands had been made for additional river steamers, a very limited service of transportation, is at any rate not open to the provoking accusation of timidity.

On the 28th September General Townshend, who was at the head of 11,000 fighting men with 32 guns (four in horseboats), besides those in the naval flotilla, defeated a Turkish force of some 10,000 men near Kut-al-Amara. At first it was hoped to repeat the feat which had been accomplished in the capture of Amara on a larger scale at Baghdad. But a sudden fall in the level of the water of the Tigris prevented rapid pursuit by river, the Turks were able to reach Ctesiphon where the entrenchment of a position had been commenced and Townshend, therefore, halted and entrenched with his advanced troops, an infantry brigade, two regiments of cavalry and 6 guns, at Aziziya. The question of undertaking a further advance was now debated at length by the various authorities concerned, and was finally decided in the affirmative on the 24th October.

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PRACTICAL COMPANY TRAINING.

By a Company Commander (Indian Army).

The Training of an Army has but one object in view—the defeat of the Nation's enemies in War—(I. T., Vol. I, 3(1).)

The object of individual training is to prepare the individual man for the individual duties which he will be required to carry out in War (I., T. Vol. I, 6(2).)

The branches of Training dealt with in this article are—

(*a*) Bayonet Training.

(*b*) Physical Training.

(*c*) Musketry.

(*d*) Drill and Handling of Arms.

(*e*) Field Work.

(*a*).—BAYONET TRAINING.

Let us examine the average Bayonet Fighting parade, as carried out, and see whether we are really fitting the individual for War.

The official pamphlet on the subject emphasises this point of view all through, but appears to be difficult to interpret in a practical manner. Possibly because it calls it "Bayonet Training."

To start at the beginning of a soldier's career.

When a recruit the soldier must learn, firstly to get accustomed to the feel and balance of his rifle and then gradually to handle it, or rather "throw it about" with ease and confidence.

Working by the book he can learn all this through the medium of the various lessons. And, since his instructor is human, he will probably learn it more or leave as a drill, in company with the rest of his squad.

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Once a trained soldier, however, he must be made more of an individualist.

How often do we see this being carried out?

How much more often do we not see parties (not even sections) of trained soldiers carrying on exactly as they did when recruits. Still in a class, and still doing 'On Guard,' 'Long Point,' 'Withdraw,' 'Dress Back,' etc. Usually in exact time, as if done to music, or as if inwardly counting One, Two, Three

Our trained soldier does his half hour or so, possibly ending with a mild charge, and is then turned off to do some other work.

Honour is satisfied. The daily half hour advocated by the book has been given to the work, but there is no idea of progression.

A mechanical correctness in Lessons I to V remains the height of the instructor's ambition. But the soldier is not being trained for fighting.

What is lacking is imagination.

Bayonet fighting usually comes as the climax of an infantryman's effort. To ensure success in the encounter we need—

(1) Strength.

(2) Speed.

(3) Accuracy.

(4) The will to close and get it over.

These will not be gained by endless repetition of a point or a parry, of a jab or a butt stroke, but by teaching him to make a fierce and rapid attack, or a parry followed up by an immediate attack.

Working on these lines Bayonet Fighting, for a trained soldier, resolves itself into—

(*a*) Teaching the man to attack with the point at every opportunity.

(*b*) Teaching a parry with the sole idea of following it up with an immediate attack.

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These will not be learnt through the medium of the usual class methods. Nor does that remarkable phrase "Master and Pupil" inspire one with any particular feeling of dash.

Every section must have its own training sticks.

After the Section Commander has demonstrated what he wants done, he might then take the men individually. If so, directly he comes within range of a man, the man should come 'On Guard,' and, following the instructor with eye and point, be prepared to make an attack or parry and attack should the instructor show an opening.

Movement with the bayonet in a threatening position should become instinctive. Both instructor and instructed should be in constant movement. The one showing an opening with the ring or making an attack with the padded end, and the other watching his every move and keeping him within range of his bayonet the whole time.

The remainder of the section either practice points, etc., or work in pairs in the same manner.

Similarly it follows that just as every section has its own training sticks, so should each company have its own sets of gallows and sacks. Preferably one or two gallows to each platoon.

Part of the half-hour should be spent fighting these sacks.

Standing, walking, running, working with rifles carried at the trail, at the high port, slung on either shoulder, etc. In fact from any position that a man might have to make a hurried point.

In some such way only can bayonet fighting be made "Alive": a real fighting effort and not a drill.

At present it is far too mechanical. Far too much attention is paid to unimportant details.

Does it really matter whether a man comes "On Guard" with the barrel of his rifle upright or slightly inclined? He used to do one, now he does the other.

The Pharisees were once condemned for observing the letter of the law. The average instructor has them beat every time.

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If he paid a little less attention to those wonderful jabs and butts and a little more to speed and strength and individual work, the standard would be very much higher.

The life of a bayonet fighting sack should be very short.

Inspecting officers should insist on seeing the finished article and not be always satisfied with seeing the article in the making.

(*b*).—Physical Training.

Physical training appeared, once upon a time, to have been reduced to a system of Table Cards.

(Since the above was written some public benefactor reduced the tables from twelve to two.)

Even so physical training should be, more than most branches of work, a means to an end. The end presumably being the strengthening, hardening, and above all quickening of the soldier, both mentally and physically.

But in this, as in other branches of training which possess Schools of Instruction, the means are in danger of becoming more important than the end.

However to revert, for a moment, to the Table Cards.

We are assured, by those who know, that the real value of these exercises lies almost as much in the order in which they are taken as in their correct performance. If this be the case, and if they are of such vital importance that none but an instructor fresh from the school can be trusted with their interpretation, how is it that a Sikh and a Dogra, a Pathan and a Gurkha, can thrive equally well on the same tables and exercises?

I have been told "They don't. That is what the alternative exercises are for."

Could I believe that regimental instructors were capable of such nice discrimination I should start moving mountains to-morrow.

As it is, one is bound to wonder exactly to what extent this "axe-ing" of ten tables is going to affect the fitness for war of the Indian Army.

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Surely in this branch of training it would be simpler to revert to older methods, and give the C. O. a freer hand in the choice of exercises. The C. O. would, provided he was well served by his company commanders, probably delegate his powers to them. They, in their turn, would carry out those exercises which they considered their men most needed at any particular time.

Setting up, running, quickening exercises, etc., would all be done. But probably the amounts would vary with the class of man the company was composed of, and the work they were doing at the time.

However Physical Training has become a highly specialised subject. One might be tempted to call it a hobby.

Consequently it is invading every branch of work, under the guise of making the man think. But it must be remembered that the more time we give to P. T. the less time we have for other things.

The soldier's profession does not allow him to become an obese individual, chained to an office stool. He usually manages to put in quite an active day's work without his P. T.

As for his brain, P. T. is not the only branch of training in which a man can be taught to use his brains.

As a means of "Setting Up", "Quickening" and giving a man command of himself it is invaluable.

We are suffering from an over-elaboration of detail. This in itself tends to kill the growth of "Mental Alertness" and "Life" which are the most valuable part of P. T.

Games were an inspiration. But games are only of value when carried out and changed from one to another at top speed. Slow methodical games and slow P. T. are anathema. Almost on a par with P. T. in boots. But both frequently seen.

The present day soldier has to learn a very great deal before he can be considered a trained man.

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It would appear beneficial to see what we can cut out of his training, not how much we can add to it.

One way in which we could reduce the work of the man in the ranks, as well as his officer, without unduly impairing his efficiency, would be to introduce a "Close Season" for changes. Give him the benefit of being a "Game Animal."

(*c*).—MUSKETRY.

Parade ground musketry, as opposed to range work, alone is dealt with. Musketry Regulations, Part I, with its 600 odd paragraphs (to say nothing of its 12 Appendices and numerous Addenda), gives one a large field to cover in our musketry parades.

Yet an hour or two a week is probably all the time that one will be able to allot to this branch of training. This is of course apart from the period when the company is struck off for preliminary training, previous to going on to the range.

In fact, partly because of the advent of the Lewis gun and partly on account of the increased importance attached to bayonet, physical training education, etc., musketry is almost in danger of being given even less time in the average weekly programme of parades.

Yet a couple of hours a week given to "mechanical" musketry, (which is taken to include loading, aiming, firing, snapshooting, etc.) can be made enough to ensure a high standard being maintained in these things. Always provided that the work is carried out at the same pace as bayonet and P. T.

But to arrive at this speed of working entails a good deal of preliminary thought.

There must not be a moment's standing about waiting for some other section to finish, or wondering what to do next.

Commence with the command "Load," and insist on the man seeing to it that he is always loaded throughout the parade. Unless he is given a definite order to unload. He will then automatically learn one good war habit.

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To continue. In fighting musketry, which is what he wants to learn, there are comparatively few vital points. The man in the ranks must be taught to—

(1) Load rapidly and accurately.

(2) Aim rapidly and accurately.

(3) Fire from behind any kind of cover.

(4) Fire a quick shot when in movement.

(5) Be able to use rapid fire.

(6) Be careful of his ammunition.

For *all* the above dummies are essential, and lots of them.

In the actual instruction, the easiest method is to divide the ground into areas roughly corresponding with the above. Platoons should have their own bits of ground, and sections should move from one area to another. Men who are backward are noted for further instruction. Standard tests can be carried out as required. The areas roughly correspond with the more important of these.

Additions, which are really just as important in musketry as in P. T., in the form of "Quickening" exercises can be thought out. For instance, you might have—

(1) A charges B from a distance of 50 yards or so. B has to load from pouch and fire before A can bayonet him.

Gradually reduce distance.

(2) A has a rifle and 3 chargers of dummies. B is empty handed. On the word 'Go,' A loads and ejects as fast as he can. B picks up dummies and refills the chargers. If B can keep A supplied he wins. Gradually increase number of chargers.

(3) Competitions in assembling bolt and rifle, loading and firing.

These are only a few. Officers can devise more for themselves. The main object aimed at throughout the parade is to combine speed with accuracy.

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Never allow a trained man to do a thing slowly and accurately which he can do quickly and accurately. Remove all idea of drill and drill methods. Don't allow the man to get into slovenly ways, but don't sacrifice speed to meticulous accuracy. Impress upon him that the end of musketry is not the annual course. He must learn to kill quickly. If he is quick enough and accurate enough he doubles his chances and yours.

The Small Arms School could help by reducing small changes to a minimum. Is the "Knuckle and Degree" method immeasurably superior to the "Clock and Finger"?

The art of getting into and out of the "Lying Position" appears to be a perennial source of worry. I usually fail to remember which is the latest method. I have never been slow on service.

Drill and Handling of Arms.

Quite a considerable part of the soldier's time is taken up by these two subjects, but in the average battalion (to which of course no one belongs), he seldom seems to become really good at either. Possibly because the officer responsible for his training does not really think the matter out.

I. T., Vol. I, Section 13 (2) to the end of the chapter, is full of the very best advice, and really gives all that is required.

If taken seriously as a branch of training, which is necessary as a means of inculcating ideas of subordination and habits of instant obedience, and of increasing a man's pride in himself and his unit, they are of the greatest value.

But carried out in a haphazard manner, with no other idea than that of filling in an otherwise blank space in the weekly Programme of Parades, they are merely a waste of time.

The common method of doing platoon (or any other) drill, is for the company commander to look at his programme and say to himself, "Let me see, Wednesday drill." "We haven't done platoon drill for some time." "We'll do some to-day."

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He then tells his platoon commanders to do some platoon drill. They, in their turn, proceed to keep their platoons on the march almost continuously for half an hour or so, evoluting (very indifferently) from one formation to another.

Little attention is paid to absolute correctness of detail, and less to the fact that the man in the ranks has not the foggiest idea what it is all about. He only knows that this form of purgatory usually only lasts for about half an hour.

To my mind what is necessary, in order to make drill useful and worth its place, is for the company commander to say to himself.

"We are weak at so and so." "To morrow we will get them done right, so that we shan't have to waste any more time over them."

He then tells his platoon commanders the particular movements he wants them to concentrate on, and sees that they pass the information on. If necessary he demonstrates the points he wants brought out. The platoon commanders then carry these movements out a sufficient number of times to ensure their being learnt.

Next time another half dozen movements or so are learnt in the same way. The platoon is also tested in what it learnt before.

By this method the men are able to grasp what it is that one is trying to teach them.

Exactly the same methods can be applied to handling of arms and teaching of guard duties.

Only necessary motions will be done. But in these men should be made to carry them out individually as well as collectively. Some men are extraordinarily awkward, and sentries or in lividuals frequently mar the work of the whole battalion.

Few good soldiers are bad at arm drill.

But don't make a hobby of it for its own sake. Remember that drill is a means of inculcating discipline and a habit of soldierly smartness and attention to detail, which qualities after all are the bed-rock of a good battalion.

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Start out with some definite plan of instruction and you are more likely to reach your goal, than by thoughtless, slipshod methods. Try and give the man the key to what he probably thinks a waste of time. Point out that nothing less than complete subordination and a habit of instant unquestioning obedience can be relied upon to pull him through when his brain starts to work subconsciously, as it will when he is very much afraid. Point out to the N.C.O's that nothing but the knowledge that they have the power to exert this influence over the collective brain of their sections will enable them to carry out their part.

Drill, to be of value, must be intense. So you cannot do too long at it. There should be a feeling of latent energy in it. Once this goes and the men cease to respond, stop it. You will undo any good you may have done if you continue.

Finally, do not expect good drill unless the men know that you are capable of showing them off to the best advantage. This is a gift which many excellent soldiers never will possess, but few can bear to admit it.

FIELD WORK.

Here we do get our peace time "End," as far as we can be said to get it anywhere.

Yet the time given to it is often less than that given to any of the various "Means" we have already discussed.

There would appear to be two main reasons for this. One that parade ground parades are easier to carry out and take less time and thought. The other that most officers feel that their commands are judged far more by their skill in these various "Means" than by their soundness in fighting work.

Bayonet, physical training etc., are always to the fore at inspections, they possess Inspecting Officers, ensure tolerably comfortable hours for parades and seem eminently suitable for post-war troops.

Also, till very recently, there has been no money to spare for manœuvres.

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However, even when field work is carried out, one very often sees an entirely wrong conception of what is required.

An Advance Guard scheme one week is followed by a Rear Guard scheme the next, possibly Hill Warfare then gets a place, and we gradually work through all the various things that an army may have to do in every conceivable kind of warfare. The idea, of course, being to avoid monotony.

This may (or may not) be sound in the British Army, but it is not in the Indian Army.

By this method of working nothing is learnt. The man in the ranks often has not the slightest idea which is which. He has not lain awake at night thinking over the day's work. He probably, if he takes the trouble to think at all, connects the work with the ground over which he worked. He relies on some one else to do his thinking for him. He extends, lies down, fires, advances and finally closes when ordered.

Why should we consider him to be a natural fighter?

We repeat Lesson 1, Bayonet Training, a hundred times in order to get some degree of accuracy. We spend hours, in the aggregate, over teaching "Load" or "Hopping on alternate Feet." Why not carry out the same procedure in field work? Go out for two or three days in succession and hammer away at one thing.

Working over different types of ground, and against varying degrees of resistance. Getting a few main principles well home. Showing why and how one formation changes into another.

Then, when platoon and section commanders have really grasped what it is that we are trying to teach them, we can turn on to something else. We shall also have time to see whether all minor points, such as communication, correct working of ground scouts, maintenance of touch, position of Lewis Gun mules, position of company headquarters, etc., are receiving attention or not. We shall not have to try and hurry everything, and we shall have time to repeat anything we see has not been understood.

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But we shant have quite so much time for the other frills.

By some such methods alone can we ensure that we are doing any permanent good. That the knowledge is being assimilated. That we are teaching the men to think.

We shall not bore the men provided that we keep up our own interest, and don't become too theoretical. Einstein's theory wont help them to fight.

Always start on the easiest ground and work up to the more difficult. Instruction in hill warfare even is best started on a flat plain.

Finally in all field work, avoid starting with stereotyped formations and trying to make the ground fit them. Look at the ground first and then settle on your formations.

Don't be academical. The "Normal Formation" had a short life. It only existed in abnormal times. The best formation is the one which will get you where you want to go quickest and with the least loss. In practice no one will ask you how you did it. If unsuccessful you will have been wrong. If successful you will have been wrong, but lucky. Try and cultivate an eye for country. This will help you more than the most abstruse theoretical knowledge about "Blobs," "Worms," "Arrows" and "What-Nots."

Make up your mind quickly and move faster.

Learn all you can, but keep movements as simple as possible. Your excess knowledge will help at the "Pow-Wow."

Conclusion.

There is little or nothing new to the majority of company commanders in the various points brought out in this article.

But there are a great many young officers commanding companies whose training started in the time of the war. Consequently, though they gained a wonderful experience, they missed a great deal of the drudgery of learning to train, which pre-war officers learnt while company officers.

They often fail to realise the difference in the power of reception between themselves and their men. Where we should be bored "stiff" by the repetition of a subject the average man in the ranks is only just beginning to get there.

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They learn mainly by repetition. We add reasoning and eight or ten years of school. Few Indian soldiers of five years' service have the slightest idea what the point of drill is.

Musketry to them is bounded by the classification practices.

Bayonet by the assault course.

The company commander has one of the most interesting jobs in the world. Provided he thinks it all out, he need never have a moment's spare time. He can make the men interested in every parade by showing them how one branch of training hinges on to another. Only he must know what he is aiming at himself. He does not need to be a genius. In fact he is usually much better if he is not. Commonsense, sympathy and energy will take him most of the way.

Of course he will never have enough time to teach all that he wants. He will find himself busy in his office writing out red and black cheques in his own handwriting (we hope not at the dictation of his clerk) when he knows that he might be far better employed outside. Or just when he is at his busiest, at the end of the musketry year, he will be racking his brain (again in his office) trying to work out J. D. Tests to five places of recurring decimals, or dividing hits by number of men fired (or *vice-versâ*) for his Company Annual Return. One consolation is that the permissable error in his calculations must be enormous. The results are seldom questioned.

He may at times feel that his work would be greatly simplified if the publication entitled "List of Changes, etc.," were extended from "Material" to include changes in P.T., Musketry, Bayonet, etc., and were brought out once a year instead of coming out in I. A. O's and circular letters just at the particular moment when he happens to be away.

Of course it would have to be obtainable from "Government Printing" and that venerable institution would have to lose the type in which "Out of Print" is kept (apparently) permanently set up.

But, when all is said and done, life would not be worth living if things were made too easy.

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Throughout all his training he must never lose sight of the fact that he may have to fight his company at very short notice. If trained on unpractical lines he jeopardises the safety of a hundred and fifty men. He must think things out himself and not rely entirely on what he hears or reads. "Festina Lente" is a very good motto, as long as he does not translate it "Wait and See."

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A TERRITORIAL DIVISION AND THE HINDENBURG LINE.

By an Eyewitness.

A very long time seems to have elapsed since that misty September morning six years ago when British, Australian and American Divisions advanced to attack the Hindenburg Line, and broke through what was probably the strongest system of defences on the Western Front, prepared at long leisure, provided with everything that ingenuity could devise, and held by German soldiers.

Full justice has been done to the 46th (North Midland) Division in the Commander-in-Chief's despatches, in Major-General Sir Archibald Montgomery's book on the Fourth Army, and in Sir John Monash's story of the Australian victories in France; yet, as the 29th September draws round again, one feels that no harm will be done by recalling the story especially when one reads in the Press that these splendid Territorial Divisions of ours, with their great traditions, are short of their proper numbers. An additional excuse is the writer's intense and abiding admiration for the officers and men from the Midlands of England, who by their courage and determination made possible the great victory of General Lord Rawlinson's Fourth Army to which they belonged.

The general situation on the Western Front in September 1918 can be seen from a perusal of the Commander-in-Chief's despatches. The sketch map I shows the approximate time on the morning of the 29th September.

In other theatres of war, the state of affairs was approximately as follows:—

In Palestine our Cavalry had reached the Sea of Galilee in pursuit of the flying Turks, 45,000 prisoners and 265 guns had been taken, and the Turkish Fourth Army had ceased to exist.

In the Balkans, the Allies under General Franchet d'Esperey had won a great victory, and on the 25th September Bulgaria proposed an Armistice.

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In Mesopotamia our advance was continuing steadily towards **Mosul**, and the way was being cleared for the final surrender of the **Turkish** Tigris Army at Shergat.

On the Italian Front the 10th and 12th Italian Armies, the former under Lord Cavan, were preparing for the great blow on the **Piave**, which was to hasten the surrender of Austro-Hungary, who had already made a peace offer through the President of the **United States**.

Early in September, Marshal Foch called on the Allied Armies for a great effort. Four converging attacks were to be made as follows (Map I.) :—

1. By the American Army with its right on the Meuse and in the general direction of Mezieres.
2. By the French Armies West of the Argonne in close co-operation with the Americans, and directed on the same place.

   Both the above attacks to commence on the 26th September.
3. By the British on the St. Quentin-Cambrai front and in the general direction of Maubeuge. This attack to commence on the 27th September.
4. By Belgian, French and British Divisions under King Albert in Flanders in the direction of Ghent. This attack to commence on the 28th September.

A series of hammer blows from which there was no respite, and which were maintained till the enemy cried for mercy.

The British Armies had been through a long period of sustained effort and heavy calls had been made on them. In March and April they had been driven towards the sea, the area behind them slowly diminishing, until the Commander-in-Chief issued his famous appeal to the Army to stand "with their backs to the wall," and gradually one of the greatest attacks in history had come to a standstill. Only those who were concerned in the conduct of the operations during those months can realize the enormous strain thrown on the men responsible for carrying out the retreat in the face of an enemy such as this, and there is no

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better example in history of leadership, training, and the value of the offensive spirit, than the steady return of the British Armies to the attack, the first effort on a big scale resulting in the great moral and material victory by the Fourth Army in front of Amiens on the 8th August.

The results of a costly failure against the main defences of the Hindenburg Line would be politically and morally great, and it was recognized that the declining moral of the German Army and people might well be revived in the event of the attack being repulsed.

The British Commander-in-Chief, after his Armies had fought their way forward to within striking distance of the Hindenberg Line, decided to put the issue to the test.

His confidence in his troops, and his own moral courage, were more than justified.

The numerical situation on the Western Front at this time was as follows, and was rapidly turning more and more in favour of the Allies.

The Germans had 197 infantry divisions and one cavalry division. 130 infantry divisions were in the line, and 67 were in reserve. Many divisions were weak in numbers, and only about twenty could be called fresh.

The Allies had 206 infantry divisions, and 10 cavalry divisions. Of these, 114 infantry divisions were in the line and 92 were in reserve. Many reserve divisions were comparatively fresh. Of the 206 infantry divisions, 29 were American Divisions, at least 50 % stronger than other Allied divisions.

In guns, tanks, and air forces, the Allies were much superior.

The situation was fast approaching, in which a shortening of the German line would become imperative, if it was to be held at all, and as the bulk of the German Army was North of an East and West line through Compiègne, there was very little room to manœuvre, and a successful blow directed at the hinge of the big salient in the direction of Mezieres might well have led to a colossal Sedan.

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Apart altogether from strategical considerations, numbers alone were beginning to tell in no small degree. Also the heavy losses of storm troops in the attempt to gain a decision in the early part of the year, had had its inevitable effect on the fighting power of the German Army as a whole, and this effect had been accentuated by the Allied successes since the beginning of August.

The constant Allied attacks were creating a number of salients in the German line, a serious matter in view of the dwindling strength of the German Armies. Salients and re-entrants take more men to hold than a straight line, and the creation of these salients, if they could be successfully held by ourselves, as was usually the case at this time, meant that the German line on either side was forced to fall back, owing to the threat to their communications.

Time was urgently needed, and some respite from these hammer blows dealt one after the other, each producing a salient more and more difficult to hold, owing to shortage of men. Time to make some sort of favourable peace, to rest and reorganize the army or to make arrangements for retiring to a shorter line.

A success of some kind was of vital importance, and a defeat of the British Army in front of the Hindenburg Line appeared to offer a chance.

The great attack on the British Front was planned to be carried out by the Fourth, Third and First Armies from South to North, the main attack to be made by the Fourth Army.

The attack was to commence on the 27th September, the first blow being dealt by the Third and First Armies on the general line GOUZEAUCOURT to near the SENSEE River (13 miles).

The attack of the Third and First Armies was intended to deceive the enemy as to where the main blow was to fall, to cover the flank of the Fourth Army and to assist the Fourth Army artillery to get into position on the left of its front of attack. This attack was most successful, and many thousands

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of prisoners were taken. Next day the advance was continued, and a footing was gained on the East bank of the CANAL de L'ESCAUT at MARCOING. Determined opposition was met with here as was anticipated, and it was hoped that the Fourth Army attack would enable the advance to continue by turning a flank.

Meanwhile on the 26th and 27th September, the French and American Armies had attacked on both sides of the ARGONNE and taken 8,000 prisoners. On the 28th September the British Second Army, French and Belgians, under King Albert, attacked between the LYS and DIXMUDE and met with great success. In both the above cases, difficulties of transport had prevented any rapid advance.

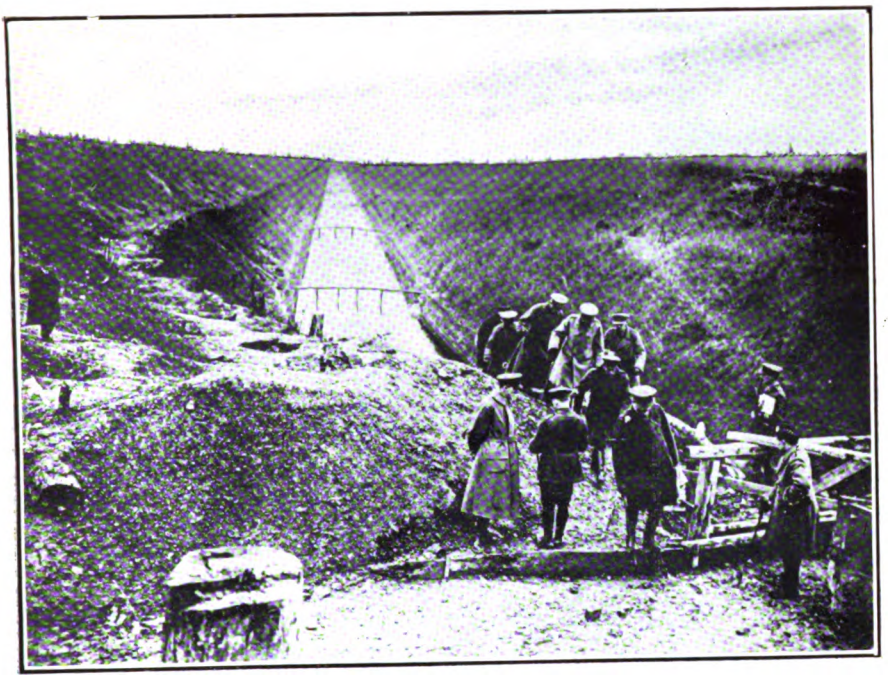
On account of the great strength of the enemy's position, and because a tactical and not a strategical surprise was aimed at, between the 27th and 29th September a heavy and continuous gas and shell bombardment was to be kept up on the whole Fourth Army front, to destroy the defences, to drive the Germans to their dug-outs, and to make the supply of food and ammunition to the front line troops difficult, if not impossible.

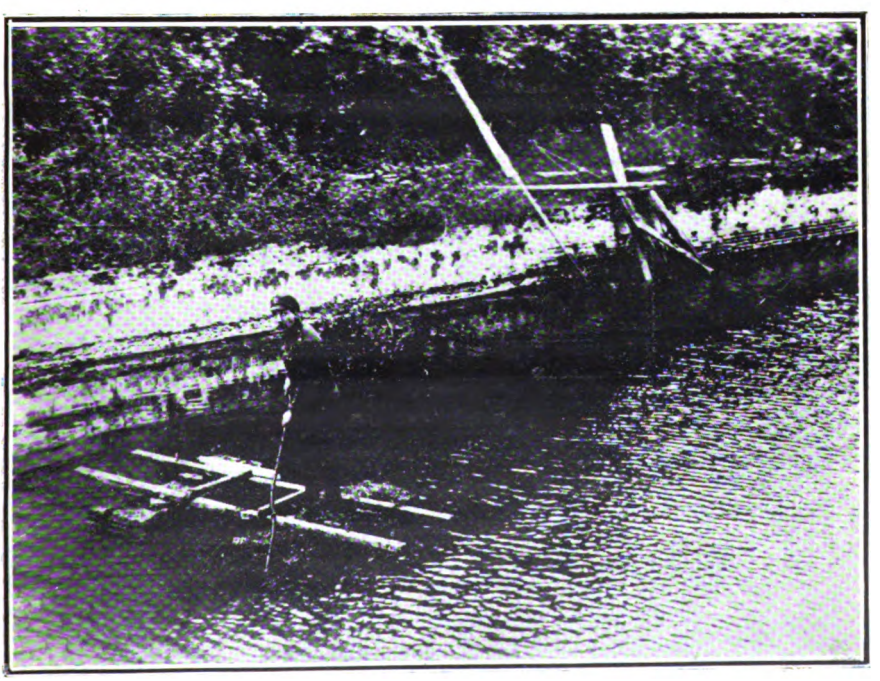
The attack was to be delivered by three Corps.

The IX Corps on the right consisted of the 1st, 6th, 32nd and 46th Divisions. The Australian-American Corps in the centre consisted of the 2nd, 3rd and 5th Australian Divisions and the 27th and 30th American Divisions. The III Corps on the left consisted of the 12th and 18th Divisions.

The main features of the defences of the Hindenburg position (called by the Germans the SIEGFRIED STELLUNG) are described in the despatches of the Commander-in-Chief and in Major-General Sir Archibald Montgomery's "History of the Fourth Army." On the IX Corps front of attack the canal ran directly in front of the main line of defences, and was full of water or mud as far South as BELLENGLISE where it became more or less dry. The steep sides of the canal, both East and West, were heavily wired and the banks which sloped away were bristling with concrete machine gun emplacements. By holding the Helene ridge we possessed the great advantage of observation but, except at the bend near BELLENGLISE a view of the actual

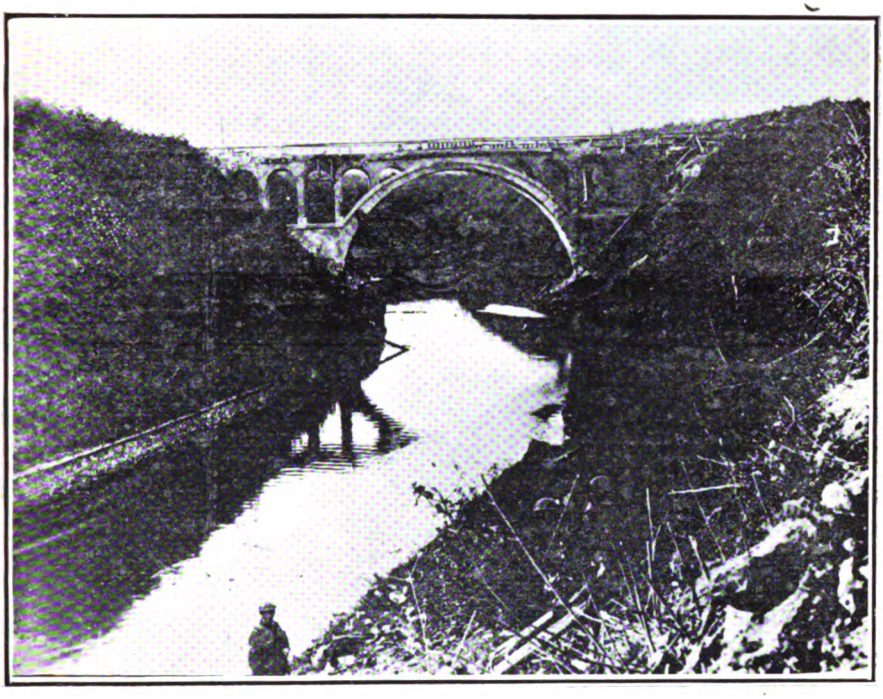
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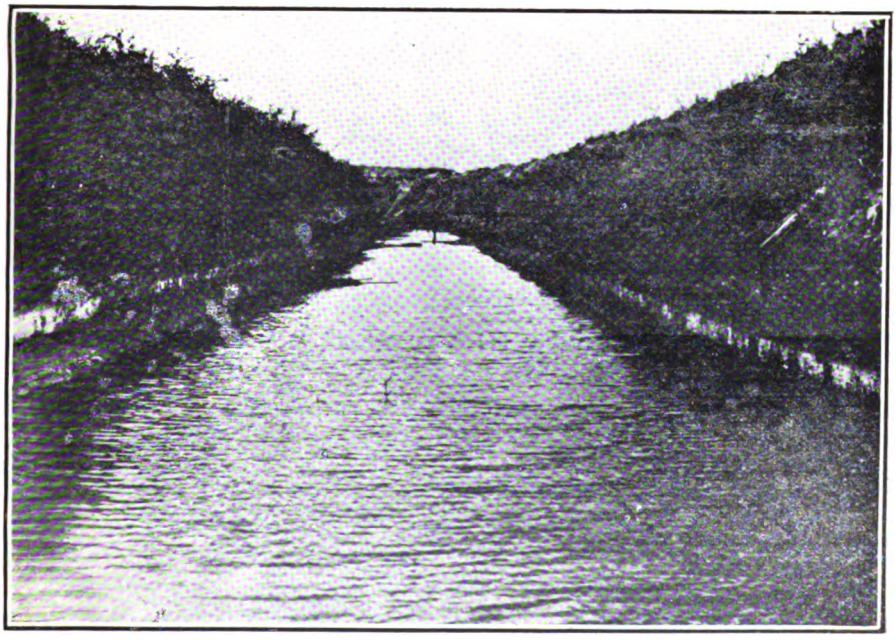




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canal itself could not be obtained. At water level the canal was about 15 yards wide. The Helène ridge was of very great importance with regard to artillery positions and its loss seriously affected the defence of the German position in this sector.

The German defensive zone stretched back some 7,000 yards over undulating country, little cut up, to what was their last real line of defence, and beyond which lay open country.

Half way between the Helène ridge and the canal the Germans held a strong line of trenches covering the approaches to the canal, and these caused considerable trouble later.

Map II and the photos show generally the trench systems, the objectives for the 29th September, and the canal itself.

Although the staging of an attack of this kind must take the form of a set piece, yet the time available for preparation was so short that there was little in the nature of real trench warfare especially with regard to elaborate communications and deep headquarter dug-outs.

The 46th Division only arrived in the IX Corps area on the 19th September from the North, the Helène ridge having just been taken by the Australians after some very gallant fighting.

The possession of the advanced positions covering the main defences of the Hindenburg Line itself was most important, and until these had been taken no definite plan could be made for an attack on the Hindenburg system. The possession of all these advanced positions gave good observation over the main system and afforded cover from ground observation for the mass of artillery which would be required to support any advance.

The successful issue of the preliminary operations to capture the advanced positions combined with other successes on the Allied front, led to the final decision to attack the enemy's last great system of defence. G. H. Q. Orders ran as follows :—

"The Fourth Army, protected on its right flank by the First French Army, will deliver the main attack against the enemy defences from LE TRONQUOY to LE CATELET, both inclusive, operating in the direction of the general line BOHAIN BUSIGNY The bombardment will commence on Z day September 27th, and the assault will be delivered on Z plus 2 day (September 29th)."

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The plan of the Fourth Army was far-reaching, and aimed at a break through. On the right, the IX Corps, holding a 10,000 yards front, was to carry out its main attack on a frontage of 3,000 yards, between a point opposite BELLENGLISE, and a point opposite RIQUEVAL bridge. In the centre the Australian-American Corps was to attack on a front from opposite RIQUEVAL bridge to a point near TROMBOIS Farm, a distance of about 8,000 yards. This Corps was to attack with the 30th and 27th American Divisions in front line, the 5th and 3rd Australian Divisions in support, and the 2nd Australian Division in reserve. On the left, the III Corps, with the 12th Division in line and the 18th Division in reserve, protected the left flank of the centre Corps, and was to capture the high ground West of VENDHUILE.

The 46th Division was to carry out the main attack on the IX Corps front, storm the canal defences and advance three miles into the heart of the enemy's position, opening out fanwise as it advanced and seizing the crossings of the canal behind the Germans holding the THORIGNY ridge. The Division was to be supported and leapfrogged by the 32nd Division. The 1st Division was to cover the right of the 46th, and push forward along the high ground towards THORIGNY. The 6th Division on the right of the 1st Division was to exert a steady pressure on the enemy.

As is well known, in fighting of the nature about to take place, supporting Divisions add little strength to the initial attack. If that fails, the supporting Divisions are used to attack again after long delay and preparation "de novo," to assist in resisting counter-attacks, or to improve the local situation.

Everything depends on the leading Divisions carrying out their task more or less up to time, in which case supporting Divisions pass through and exploit the initial success.

Although the sector selected for the main attack by the IX Corps was the strongest on the whole Corps front, it was possible to bring to bear on it a great weight of artillery and to take portions of it in enfilade.

An attack on both sides of the BELLENGLISE salient meant spreading the weight of artillery available over at least

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double the front of attack, and using the 32nd Division in front line instead of having that Division available to pass through the 46th if the latter were successful.

It is obvious that the whole issue of the battle as far as the IX Corps was concerned depended on the attack of the Territorial Division ordered to lead.

Sir John Monash remarking on this sector of the Hindenburg Line and giving his views when his troops held the sector now occupied by the 46th Division states :—

"I put forward no suggestion that the canal sector then in front of me should be the subject of a frontal attack at all. My proposal was that it should be taken by envelopment, through the breach to be made over the tunnel. At the time I regarded it as unlikely that the deep canal itself could be stormed except at great cost. I was not prepared to commit any Australian troops under my command to such an enterprise, and therefore naturally hesitated to propose that any other Corps should attempt it."

The defences facing the Australians and Americans were also very formidable, but the two strong American Divisions in front line had not to cross the canal, and they could therefore obtain the direct assistance of tanks.

Whether the enemy expected an infantry attack on the sector opposite the IX Corps or whether they looked on the bombardment in this sector as only a feint, it is not possible to say, but at any rate their defences were strongly held with men, machine guns, and guns when the actual assault took place.

The great strength of the sector to be assaulted by the IX Corps, and the general distribution of troops along the Fourth Army front, indicated that the decisive attack was that to be made by the Australian-American Corps, and that on the success of this attack the main hopes of a big victory rested.

Perhaps thoughts of this nature were present in the minds of the Army and Corps Commander but if they were, neither gave any indication of the fact, and no mention of "holding attacks" was made when the Army Commander himself visited th 46th Division Headquarters a day or two before the battle.

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Our pre-war regulations had a paragraph which used to give us a great deal of trouble in the old Staff College days:—

> "In order to prevent the enemy from thinning the line so as to reinforce the point against which he expects the decisive attack will be directed, and to force him to use up his reserves, it will be absolutely necessary for the troops to whom the rôle of wearing down the enemy's resistance is allotted, to act with vigour.
>
> "No half measures will succeed.
>
> "The enemy must be deceived, and this will call for as much self-sacrifice and devotion on the part of these troops as will be required from those taking part in the decisive attack."

If the troops of the IX Corps were intended to carry out such a rôle, right well they did it, and as a holding attack the operation may well stand as a model.

The 46th Division took over its battle front on the night of the 21/22nd September from the 4th and 12th Australian Brigades, and at this time there was a certain amount of fighting going on in the way of bombing in the advanced posts.

The battle front of the Division ran generally along the Helene ridge from a point nearly due West of the salient at BELLENGLISE to a point nearly due West of RIQUEVAL bridge, where it touched the 30th American Division.

On the 25th September Divisional Operation Orders were issued giving the general plan. These orders were followed by instructions and conferences.

Time was very short, and an enormous amount of work had to be got through; matters were made more difficult by the C.R.E., being unfortunately wounded. He naturally had most important duties in connection with an operation of this kind, and pluckily stuck to his job as far as he could.

The Divisional plan of attack was comparatively simple, with this operation in view, the Stafford Brigade (137th) had been kept very fresh and was therefore detailed to lead the attack and form the bridgehead.

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Both the Brigadier and the Brigade-Major of this Brigade had won the Victoria Cross in the war.

The Brigade was to be deployed on a front of all three battalions, its task being to storm the canal defences and establish a bridgehead, seizing the entrance to the great tunnel which ran from near the Church at BELLENGLISE back to MAGNY LA FOSSE. This tunnel was a fine engineering feat, the main object of which was to afford a covered approach to the front system. It was capable of holding some 2,000 men and had many rooms, H.-Q's, etc., and a well equipped underground dressing station. It was lit throughout by electric light. From air photographs, the entrances were well known.

Behind the leading Brigade came the field companies and pioneer battalion of the Division, whose duty it was to throw light bridges over the canal and to make a bridge for the passage of the Field Artillery as soon as possible.

Behind the Engineers and Pioneers came the other two Brigades each on a one battalion front with a definite objective allotted to each battalion.

It will be seen from map II that after passing through the Stafford Brigade forming the bridgehead, these battalions had to attack on somewhat wide fronts, the final frontage being much greater than the frontage of the bridgehead. Besides which the planks had to be protected and the right Brigade was responsible for holding the canal crossings between LEHAUCOURT and BELLENGLISE and so cutting off the Germans in front of the 1st Division. In rear of the Stafford Brigade, the Sherwood Forester Brigade formed up on the right and the Lincoln and Leicester Brigade on the left.

There was no reserve in the Divisional sense of the word, but the 32nd Division was close behind and its Commander was in close touch with the 46th Division Headquarters.

It was clear that if the objectives were reached, every man would be required. In an attack of this kind, the Divisional Commander and his Staff use all their brains and experience to make the price of victory as cheap as possible, but once zero

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hour has come the issue hangs on the skill and courage of the subordinate leaders, each and all animated by one fixed idea and purpose, namely, to reach and hold their allotted objectives. In addition, deep down in each soldier's heart must be the feeling that the honour of his Regiment, his Brigade, and of his Division is at stake and is in his hands.

All these moral influences which mean so much in war must come from above, and cannot exert their full effect unless fortified by training, discipline and confidence of the men in themselves and in their leaders.

The Divisional Commander was not one of those who considered that the British soldier is entirely unmoved by appeals to his feelings before a great effort.

To be effective such appeals must, however, be rare, straightforward, and from a Commander the troops know and trust.

Every platoon commander must be given a copy of such special orders, and this can be done.

This was the message sent to Brigadier-General Campbell, V.C., Commanding the Stafford Brigade by the Divisional Commander:—

"To you and your men has been entrusted the honourable but difficult task of forcing the line of the canal and capturing Bellenglise. I am more than confident that the Stafford Brigade will overcome all obstacles and win through. Good luck." Copies down to platoon commanders, Stafford Brigade.

Similar messages were sent to the other troops in the Division.

Good luck, yes, in the shape of a thick mist; but had it not been for the skill and determination with which the troops were led, the mist instead of being a screen and help, might easily have been the cause of a complete loss of direction with serious results.

The Infantry main plan having been settled, there were several other very important matters to be dealt with.

Naturally when troops are faced with an obstacle like deep water, and there is every chance of finding all existing bridges, light and otherwise, destroyed by the enemy, the question of other means of crossing arises. In this case someone mentioned the

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word lifebelts, and the idea was immediately seized upon. Time was very short and only the leave boats could be a possible source of supply of the large numbers required. By superhuman efforts on the part of all concerned the lifebelts arrived just in time, about 2,000, and were issued to the Stafford Brigade. It was found by experiments hastily carried out in the Somme river, that a man in battle order, even though a powerful swimmer, could make little or no headway when equipped with a lifebelt The lifebelt did, however, keep his head well above water, and men so equipped could very rapidly pass along a line stretched across from bank to bank, the lifebelt affording great assistance.

The issue of the lifebelts gave great confidence to the men, who felt that at any rate they would not be drowned, and in every way the efforts to procure them contributed considerably to the success of the battle. Small piers, collapsible boats, mats, scaling ladders, etc., were all provided in addition, and each type tested rapidly on the Somme.

As a matter of fact, owing to the early pace of the barrage and the impetuosity of the attack, some of the German extemporized bridges were found intact, and RIQUEVAL bridge itself, although very shaky, was saved in the nick of time by the gallantry of an officer of the South Staffords.

Under the protection of the very heavy covering fire arranged to rest for some time on the East bank of the canal, selected officers or men from the leading platoons swam over with a light line pulling a heavier one over afterwards over which the men passed hand over hand.

Very strong concrete machine gun emplacements were known to exist at the salient opposite BELLENGLISE, designed to sweep both arms of the canal. The bulk of these appeared to be designed to fire South and it was very important to fix exactly on the ground where the right of the attack should be directed, so as to avoid as much as possible the direct enfilade fire from these positions.

This point was fixed after reconnaissance by the Divisional Commander and the Brigadier of the leading Brigade, and of course was dealt with by the artillery, and very effectively as was seen after the battle.

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The sides of the canal were faced with brick and were several feet above the level of the water. Unless something could be done to remedy this state of affairs, the men would find it very difficult, if not impossible, to get out on the far side.

Heavy howitzers were therefore placed as much in enfilade as possible and endeavoured to make ramps in this wall on the enemy side. These efforts were very successful and the positions of these ramps were located before the attack by means of aeroplane photos.

As has been previously pointed out, an attack of this nature either succeeds in the first hour or so or else it is continued at great disadvantage, and with increasing losses. Anything in the nature of a serious check is all in favour of the enemy.

There was no intention of committing the whole of the division to the banks of the canal to be shot to pieces until information was received that the Staffords were over and had established themselves on the Eastern bank. At the same time, it was very probable that the Staffords would be heavily counter-attacked if they got across, and their quick support had to be arranged for.

Orders were therefore issued that the two rear Brigades were not to advance from the jumping-off line without further orders from divisional headquarters, but the commanders of the two leading battalions of each brigade were responsible for finding out the situation in front, and if the Staffords succeeded in forcing the canal, they were to move their units rapidly across to their support.

This arrangement worked admirably in the actual battle, and by the time orders had reached the two rear brigades to advance on their allotted objectives, the whole division was moving steadily forward like a well trained pack of hounds.

Another matter which had to be considered was the existence of a strongly held and wired line between our position and the canal, and running approximately parallel to our front line.

The position occupied by the division was some 1,500 yards from the canal banks, and the final objective for the day some 5,000 yards away. In the area about the canal and beyond was

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a strong system of trenches, and a clear run to the canal was naturally desirable.

As long, however, as the Germans held these trenches in some strength, some of the foot-bridges behind them were certain to be intact until at any rate the last minute, and if these could be seized before they could be destroyed the actual crossing of the canal would be facilitated. The enemy might, however, abandon this forward position at any moment, and destroy the bridges, and at any rate he was sure to have made careful arrangements for blowing them up in time even if it involved sacrificing some of the men on the Western bank.

It seemed probable also that minor operations on this front would not lead the enemy to believe that anything more than an artillery demonstration would be carried out. How far these ideas were right is not known, but an incident which took place later rather confirmed this view.

The permission of the Corps Commander Lieut.-Genl. Sir Walter Braithwaite, was asked and received, and on the 27th, the 138th Infantry Brigade attacked and took the trenches, killing many of the enemy and taking over 100 prisoners. The division got on to its battle front on the 28th and the Staffords took over the captured trenches.

All went well until the afternoon of the 28th, *i.e.* the day before the great attack, when under cover of a heavy bombardment the enemy put in a gallant counter-attack against these trenches and, after severe fighting, retook some of them. Loss of men, and especially men of the Stafford Brigade, was a serious matter, and it was no time to lose any more men in minor operations. On the evening of the 28th our men and the Germans held part of these trenches, and the actual situation in some places was not too clear. Orders were therefore given for the trenches to be entirely evacuated that night, so that the opening barrage could be put down straight with no complications. Some of the lifebelts were in the trenches, in preparation for the next day in spite of orders that these were only to be issued at the last moment. Whether any report about the lifebelts ever reached German headquarters has never been mentioned, but the whole business was rather disquieting at the time.

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Six Brigades of Field Artillery in addition to certain Medium Brigades took part in the barrage on the 46th Division front of attack which, as can be seen from the sketch, was perfectly simple and straight. This gave one field gun to about every 25 yards of front.

The advance to the canal was designed to be rapid, the barrage moving at the rate of 100 yards in 2 minutes (Map III). On the Blue Line there was a pause of 30 minutes to give the leading brigade time to reorganize before advancing to their final objective for the day.

On the Brown Line there was a pause of three hours to allow the two rear brigades to close up, cross the canal, and get ready for the advance on their own particular objectives, and also to allow some of the artillery to move up closer to the canal so as to be able to reach further out.

After the bridgehead had been taken, the further advance was slowed down to the rate of 100 yards in 4 minutes.

The pause of three hours on the Brown Line proved to be none too long.

Zero hour was fixed (by the Army) at 5·50 A.M. and the final, objective of the Division was timed to be taken at 1·52 P.M., *i.e.* after 8 hours of fighting.

The 2nd Life Guards M. G. Battalion and the 100th Machine Gun Battalion were attached to the Division and used for barrage purposes.

The barrage was put down generally on the defensive system East of the canal, and kept there within safety limits.

Of the 46th Division Machine Gun battalion, one company moved in immediate support of the Stafford Brigade.

Two Companies were ordered to move forward as early as possible after zero to positions on the west bank of the canal so as to assist in the defence of the bridgehead and be ready to support the advance on LEHAUCOURT and MAGNY LA FOSSE. These two companies subsequently crossed the canal and assisted in the consolidation in depth of the ground won.

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The fourth company was kept in reserve and was later moved across to assist in protecting the left flank.

Two Companies of Tanks were allotted to the support of the 46th Division. These Tanks were to cross the canal behind the Americans over the tunnel, and it was hoped that they would arrive in time to assist the two rear brigades to take their objectives.

Some of these Tanks eventually arrived and did extremely good service, especially in connection with the advance on MAGNY LA FOSSE.

The following Engineer units were detailed to work in the Divisional area in addition to the Pioneer battalions of the 32nd and 46th Divisions:—

32nd Division, R.E.

46th Division, R.E.

216 Army Troops Company, R.E.

574 Army Troops Company, R.E.

567 Army Troops Company, R.E.

254 Tunneling Company, R.E.

180 Tunneling Company, R.E.

256 Tunneling Company, R.E.

All these had detailed orders as to their work in connection with bridging the canal, forward reconnaissance, roads, trench crossings, etc.

Generally speaking, the 46th Division R.E. and the Monmouthshire Pioneers (46th Division) made the light bridges, cork piers, rafts, etc., whilst the remainder were employed on heavier types of bridges designed to carry M.T. and Artillery and on communications to and beyond the canal.

As will be seen from what has been written already, an enormous amount of work had to be got through in a comparatively short time. Arrangements for co-operation had also to be made with the 30th American Division on the left, and for various reasons these were not entirely satisfactory. Although both Divisions started in close touch, their attacks gradually diverged, and it was many hours after zero when the men of the 46th

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Division gained touch with any troops of the Australian-American Corps. In fact as far as is known, no American troops were met that day, but at about 15·30 hours to everyone's relief, touch was obtained near Etricourt with troops of the 5th Australian Division who had most gallantly forced their way through, after confused and determined fighting.

Local command of the air was ours, but owing to the mist little information came in from this source until later in the day.

Eventually all was ready, the troops fully determined to win and in good heart, and matters were now in the lap of the gods.

A rather disturbing factor was the resolute counter-attack which had been made against our front line, and the way the enemy had fought in spite of the bombardment to which he had been subjected for 48 hours.

A small corps of mounted men had been organised, mostly gunners, to act as special observers. Their sole duty was to report the progress of the battle and especially the success or otherwise of the attack of the leading brigade. They were provided with one wireless set.

As zero hour approached feelings were rather tense, and a small party from Divisional Headquarters went up to a hill nearby.

Everything was, as is often the case, strangely still, as if both sides were nerving themselves for the struggle.

The mist was distinctly thick, and it was consoling to know that all ranks had been well trained in the use of the compass.

One visualised the scene in the trenches and in the batteries as the minutes went slowly by, and hoped that the German barrage would not come down on our troops forming up.

At last the almost intolerable strain was over, and a storm of shell burst on the enemy's positions.

The battle had begun, and the Midlanders were advancing to what was to be perhaps the greatest and most dramatic single feat of arms of the whole war.

The party went slowly back to headquarters, not expecting any information yet, but hoping for something good soon to send on to the Corps.

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Gradually news began to come in.

The attack had started well. Many prisoners were coming in.

The mist was very thick. Communications difficult, etc.

The information really wanted did not, however, arrive.

Time went on. Anxious looks were cast at the barrage table.

In 28 minutes after zero, if all had gone well, the Staffords should be on the Blue Line across the canal.

Perhaps they were. One pictured the gallant Brigadier carried away by the success of his men, organising and directing the operations himself, having no doubt sent off reports which never reached headquarters.

One wondered if the two battalions ordered to back him up had moved, and if the rest of the Division was on its toes all ready.

It was 7 A.M. After all had they failed?

At last came a message from the Brigadier that his two left battalions were over the canal but that he had no news from his right battalion. Shortly after a message from a divisional observer came in stating that at 7 A.M. the 8th Sherwoods, *i.e.* the leading battalion of the Sherwood Forester Brigade, was crossing the canal near BELLENGLISE and that the Staffords had taken that place.

That was enough. Orders were instantly sent out for the whole Division to press on to their objectives, but long before the order reached the troops, the brigadiers had put their battalions in motion.

Attention was now directed to what was going on on the flanks. The 1st Division had gallantly covered our right and their line that night ran from Gricourt to the canal North of LEHAUCOURT.

In the true spirit of co-operation its Divisional Commander, Major-General Strickland, sent out orders quite early that the Division was to act as if the 46th had taken all their objectives. His confidence was fully justified. Behind us the 32nd Division was all ready, and we were in very close touch with the Commander, General Lambert, the victim of a cowardly murder in Ireland a few years later.

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On the left the first reports which came in were quite satisfactory but later news became rather disquieting. As time went on it became clear that things had not gone according to programme, especially as the troops after crossing RIQUEVAL bridge could gain no touch at all with the Americans.

Meanwhile, on the divisional front the battle went exactly according to plan.

The Staffords overran the trenches this side of the canal, killing or wounding most of the occupants. Some of the lifebelts which had caused so much anxiety were found in these trenches, so possibly their full meaning was never realized by the enemy command. Many gallant feats of arms were performed, some of the footbridges were saved, as also was RIQUEVAL bridge on the extreme left. The writer, with a shrapnel bullet in his shoulder, crossed this bridge in 1914 during the retreat from LE CATEAU, after a very narrow escape from the Germans near ETRICOURT.

The advance proceeded regularly, one line of trenches after another being taken, and many batteries being captured, the gunners in nearly all cases putting up an obstinate resistance.

As the Sherwood Forester Brigade pressed forward towards LEHAUCOURT, a German battery was swung round on the West bank of the canal to take their attack in enfilade. Some of the Sherwoods crossed the canal and captured this battery at the point of the bayonet, but not before it had knocked out all the Tanks which were supporting this attack.

By 3 P.M. the whole of the objectives allotted to the Division had been captured, and consolidation was in progress. The 32nd Division was moving up to advance later from the Green Line, and arrangements had been made to secure the left of the 46th Division. The right, as will be seen, was directly behind the enemy position in front of the remainder of the Corps, and also "in the air," although protected to a certain extent by the hold on the canal crossings, although here the canal was in many places more or less dry.

At about 1 P.M., the Divisional Commander, accompanied by a small Staff, rode down to the canal and crossed by a bridge over which a field battery was just moving. As the party reached

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the high ground the other side of the canal the sight was one which every soldier longed for during the war.

Looking East, everywhere the Infantry were pressing forward, covered by what appeared to be a powerful barrage.

Hundreds of German prisoners were moving towards our lines on the West bank of the canal.

The whole impression of the scene was that of open warfare at last. It looked like a break through, and up to that time there had been no organized effort at counter-attack.

The bridgehead was solidly established, and the Engineers and Pioneers were working like beavers on the bridges over the canal.

There was little enemy shelling.

If the attack were successful, Divl. H.-Q. were to be moved to a former German regimental headquarters at LA BARAQUE, about half a mile North of BELLENGLISE, and by the evening advanced Divl. H.-Q. were fully established there, with communication out to all. It proved to be an excellent selection, a well furnished underground house, but the neighbourhood received marked attention from the enemy air forces that night, a large bomb falling just out-side in the middle of a group of German prisoners, killing or wounding most of them.

To our relief, the left brigade eventually gained touch with troops of the 32nd Bn., 5th Australian Division near ETRICOURT.

The 32nd Division began to cross the canal at about 4 P.M., and pushing on well, reached the line shown on the map, before dark.

It now began to rain fairly hard.

The 5th Australian Division was nearly all East of the canal and in touch with our left.

The 3rd Australian Division was entirely West of the canal and progress on this part of the front had been small.

The two American Divisions had been badly mauled in spite of their gallantry, and were hardly capable of further effort for the time.

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The 2nd Australian Division was being rapidly brought up to the front from rest billets.

The great attack on this part of the front had to all intents and purposes failed, as a glance at the final objective laid down for the day will show.

Nevertheless, a wedge had been driven deep into the enemy's defences, and at the strongest part of his line. If the ground won could be held, it was clear that further pressure in the right direction was bound to be effective.

The captures made by the 46th Division amounted to some 4,200 prisoners, 70 field guns, one battery of 4·2" howitzers, one battery high velocity guns, about 300 machine guns, and a large number of trench mortars. The 2nd German Division practically ceased to exist and the 11th, 75th and 79th Divisions had been very roughly handled.

The total losses of the 46th Division were under 1,000 all ranks.

Had the Midlanders failed, and incurred the heavy losses which failure would certainly have entailed, it is not unlikely that the morning of the 30th September would have found the whole Fourth Army West of the canal, committed to an entirely fresh attack with tired and, to a certain extent, disappointed troops, the enemy being correspondingly elated.

When it is remembered that the great blow to be dealt by the Fourth Army was the most important attack on the whole British front, and that the attacks of the First and Third Armies had only been intended as preparatory to the great blow, it is hardly too much to claim that the successful attack across the canal by a British First Line Territorial Division shortened the war and saved thousands of soldiers' lives.

As regards the Fourth Army front, the results of the success on the IX Corps front can be seen from the line reached by the Australians and French on the night 2nd/3rd October.

All honour to the Australians for their fine fighting to restore the battle, clear the Hindenburg system, and push up in line with the IX Corps, but they were the first to acknowledge their debt to the troops who made and held the original gap.

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Thus by October 3rd, the Fourth Army was ready to attack the BEAUREVOIR Line, the last German line of defence on this part of the front, and beyond which lay open country.

In addition, the whole German front Southwards had given way, and the French had occupied the very strong ST. QUENTIN position.

Apart from good staff work, many lessons are to be learnt from the story of these operations, but the following seem to stand out above the others:—

First, the great importance in modern war of attacking on a wide front and of being prepared to exploit success wherever it is gained.

Secondly, the importance of allotting definite objectives to any holding or subsidiary attacks, and pushing them home.

Thirdly, the great results to be obtained by penetration even on a comparatively narrow front, provided the ground gained can be held, and pressure maintained in the right direction.

Lastly, the lesson of "moral."

The 46th Division was the first complete Territorial Division to arrive in France. It took a gallant part in many engagements throughout the war, and like many other divisions suffered heavy losses.

It went down from the North to join the Fourth Army fully determined to make a great name for itself if the opportunity offered. That feeling was fostered and kindled in every possible way.

A misty morning, and a position such as the one to be attacked, was enough to test the "morale" of any troops, and the enemy had shown few signs of any want of spirit, at any rate on this portion of the front.

The news of the success of their own Division caused a wave of enthusiasm to pass through the Midland Counties, and many were the telegrams that came in, from Lords Lieutenants downwards, all of which were religiously passed down to the private soldier.

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One such message the Division will always remember; here it is.

> "Two thousand boys and girls from Buxton Schools, Derbyshire, assembled in the market place to-day saluted the Union Jack in honour of the glorious deeds of their 46th Division. They thank you for all you have done for them and pray God to bless you all and bring you safe home."

After much more successful fighting, the 11th November found the Division in front line on the extreme right of the British Armies with Headquarters at SAINS DU NORD, South of AVESNES.

APPENDICES:—

Sketch Map, Western Front. (Map I.)

Map showing objectives, Fourth Army. (Map II.)

Barrage Map. (Map III.)

Photos of canal, etc.

Order of Battle, 46th (North Midland) Division.

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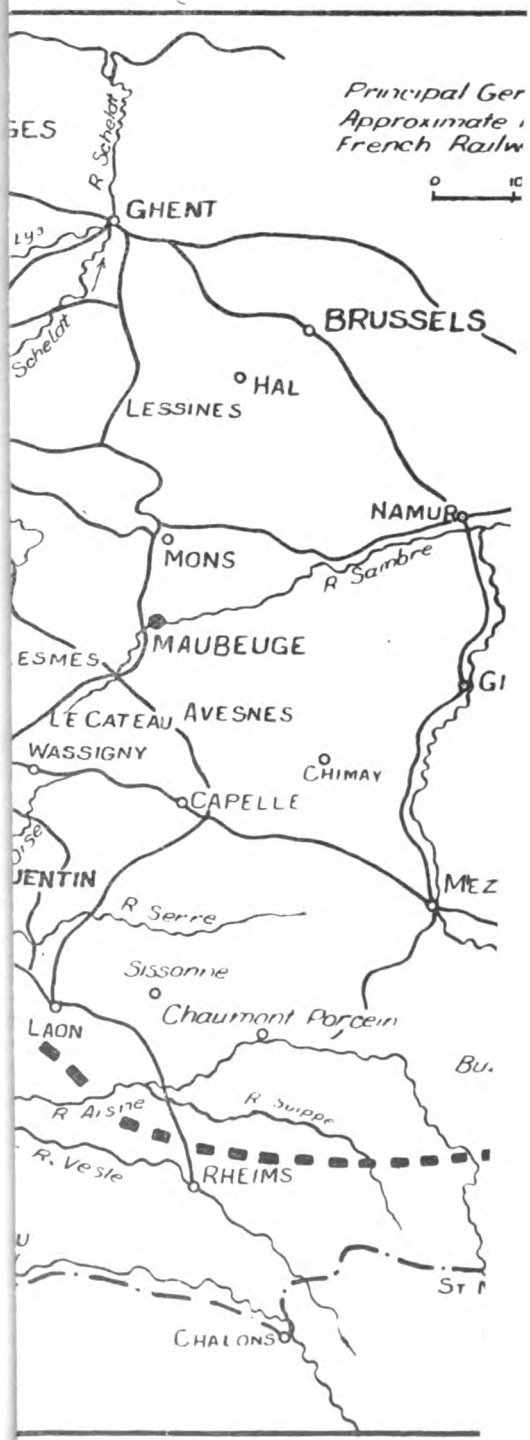
IX Corps Summary of Operations.

War Diaries.

ORDER OF BATTLE, 46TH (NORTH MIDLAND) DIVISION(T).

137TH INFANTRY BRIGADE.	138TH INFANTRY BRIGADE.
1/5th Bn. South Staffordshire Regt.	1/5th Bn. Lincolnshire Regt.
1/6th Bn. South Staffordshire Regt.	1/4th Bn. Leicestershire Regt.
1/6th Bn. North Staffordshire Regt.	1/5th Bn. Leicestershire Regt.
187th Trench Mortar Battery.	138th Trench Mortar Battery.

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MAP II



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MAP III



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139TH INFANTRY BRIGADE.

1/5th Bn. Sherwood Foresters (Nottinghamshire & Derbyshire Regt.).

1/6th Bn. Sherwood Foresters (Nottinghamshire & Derbyshire Regt.).

1/8th Bn. Sherwood Foresters (Nottinghamshire & Derbyshire Regt.).

139th Trench Mortar Battery.

DIVISIONAL ARTILLERY.

230th and 231st Brigades, R.F.A.

X/46th and Y/46th Trench Mortar Batteries, R.A

46th Divisional Ammunition column.

DIVISIONAL ENGINEERS.

465th, 466th and 468th Field Companies, R.E.

46th Divisional Signal Company.

1/1st Bn. Monmouthshire Regt. (Pioneers).

46th Bn., Machine Gun Corps.

46th Divisional Train.

46th Divisional M.T. Company.

1/1st, 1/2nd and 1/3rd (North Midland) Field Ambulances.

1/1st (North Midland) Mobile Veterinary Section.

ATTACHED TROOPS.

16th Army Brigade, R.H.A.

5th Army Brigade, R.F.A.

14th Army Brigade, R.F.A.

23rd Army Brigade, R.F.A.

232nd Army Brigade, R.F.A.

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THE SOLUTION OF TACTICAL PROBLEMS ON THE MAP.

(*By Colonel R. J. Collins, C.M.G., D.S.O.*)

1. In the previous number of this Journal (*July 1924*) Colonel MacNamara gave some valuable hints on how to work for the Staff College Examination. In this article I propose to go a stage further, and to amplify his remarks with special reference to the Training for War papers, which have so often proved a stumbling block on the road to Camberley or Quetta. The examination being, perforce, a written one, the candidates' tactical knowledge can only be tested theoretically and on the map. In such a test imagination must be called into play, if the best results are to be obtained. This is a quality which is not always so much the British Officer's "strong suit" as it is with his confrère across the Channel. Many an officer who, if confronted with a tactical problem on the ground in a practical form, would find little difficulty in coming quickly to a sound decision, when placed in a room, with a map and a printed narrative before him finds great difficulty not only in "sizing up" the situation and in making a plan, but even more in putting that plan clearly down on paper. It is for the assistance of these latter—often the best of soldiers in the field—that the following hints and suggestions are intended.

2. *The Time factor.*—In nearly all such tactical papers, at any rate in all examination papers of this type, the time factor plays a large part. The complications of modern warfare, with its ever increasing arms and weapons and services, renders it difficult to produce a situation, clear enough to set a problem on without an unduly long narrative, the very reading of which absorbs many precious minutes.

Firstly therefore the examinee should cultivate the art of arriving quickly at the gist of each problem. The form of the problem or question at the end of the narrative will not, as a rule, make this clear, though it is sure to say whom the unfortunate

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examinee will be expected to represent. It may be necessary to skim through the narrative. Practically speaking, as Training and Manœuvre Regulations, 1923, say on page 29, the five principal tactical operations of war are Attack, Defence, Protection at rest, Advanced and Rear Guards. To this we might add Flank Guards. The examiner will, when he sets out to frame his problem, have one or other of these in his mind. So it behoves the examinee swiftly to read through the Examination paper with a view to making up *his* mind which has been set. A reference to the *Narrative at the end of this article will show what I mean. The first problem is disclosed in the orders given in paragraph 3 of the First Narrative in the words:—

"1st Division will halt for the night. 1st Infantry Brigade to find outposts." A similar perusal of the orders given in paragraph 1 of the Second Narrative will disclose the second problem.

"2nd Infantry Brigade will act as right flank guard." As is often the case the third question set in this particular paper was an academic one, of half the mark value of the first two, the gist of it easy to pick up in a few minutes.

But it is not too much to say that the reading through of the paper in order to arrive at the above stated facts will have taken the average candidate fifteen to twenty minutes, or as much as half an hour if he has included the fixing of the situation on the map as well. He has therefore but 2½ hours left of the three allowed.

He should at this point make up his mind whether he will answer all three questions or only two and how much time he can spare for each question.

The answer to this must depend upon the candidate's knowledge and tactical predilections. But, having made up his mind, it is imperative that he should stick to it. No panicking half way through: no crossing out of one solution when half completed. In such vagaries lies disaster.

3. *The Problem.*—Having allotted a fixed time to each question the examinee must, metaphorically speaking, take his coat off and get down to it, or rather right into the picture

*From the first Training for War Paper. Staff College Entrance Examination, 1924.

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that the examiner has tried so hard to paint clearly and brightly. Knowing roughly what the problem is, the candidate must get the situation, as depicted in the narrative, and the ground, as depicted by the map, into his head. In both cases practice alone will make perfect. Some minds arrive more easily at a clear idea of the problem by means of a rough diagram of the area with the troops to be dealt with and the distances, frontages, etc., added. Such a method is fool-proof and often saves time in the long run. Others put the situation on the map right away. In this latter case a word of warning may not come amiss. Use a very soft lead pencil and have some good rubber handy, as you may want later to put your final dispositions on the map Remember, too, examiners are but human and clearness and neatness always meets with its due reward, not only in additional marks but in an excusable friendliness towards your peccadilloes, should there be any.

In order to arrive clearly at the problem which you are ask to solve—and it is almost incredible how often candidates remain doubtful of this fundamental requirement at the end even of several pages of attempts at its solution—it is often of value to put to yourself a series of simple questions, such as:—

Who am I? Where am I? What have I got to do?

Having answered these you should have no fear of "going off the rails" later.

4. *The Solution of the Problem.*—Having made up your mind what the problem is, obviously the next thing to do is to solve it, the ultimate object of your solution being a PLAN which plan may have to be translated into ORDERS. Decisions are arrived at by most animals and some human beings—these latter generally of a low order of intelligence—by instinct or intuition. In some ways the solution of a tactical problem by such swift means represents an ideal, at any rate for the candidate in a Staff College Examination to whom time is vital.

But to the normal human being, under which category we may reasonably include our examinee, the solution of a problem is arrived at by a process of reasoning, by argument and by weighing the pros and cons. Training and Manœuvre Regulations

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call this an "appreciation" and give you valuable hints on how to write one. Read these carefully. But don't imagine that you will always have time, either in examinations or still less in war, to use quite such an elaborate form or ritual as is there outlined. You must remember that, in your case, minutes are vital and that your arguments must be set down in the minimum of words, in fact in almost cryptic form. They should be, in fact, merely in sufficient detail to show the examiner the line of thought by which you arrived at your plan.

Don't therefore indulge in platitudes or quotations from the Training Manuals. They "cut no ice" and waste time, yours which is bad enough and the examiner's too which is possibly worse.

Don't mention any "factor" or fact or statement of opinion, unless from it you can make a deduction which will actually effect your plan.

5. *The Plan.*—Out of the above appreciation will, or should, emerge your plan. Here we come upon another difficulty. It is not easy to state your plan clearly and yet shortly. The detail into which you should go in stating it, is dependent firstly upon whether you are asked to translate it later into orders, and secondly if you are able to use the map to save writing. If not asked for your orders, you should put your plan down in considerable detail. By a skilful manipulation of these three, plan, orders and map, much can be done to shorten your answer. The example given later will I hope show what I mean.

Anyway be sure and write your plan down in a logical and methodical manner. Work, as F. S. R. II. tells you from right to left and from front to rear. Deal with the various arms and services as they are likely to become engaged. Here skilful setting out of your answer is likely to benefit you considerably, just as it will in writing orders. In fact it is not too much to say that clear crisp orders will almost make a bad plan look a good one. And in war it may well turn a probable failure into a success.

6. It now only remains to practice what I have preached and to try and show, in a concrete form, what I have tried to put into words above. In Question I, you are asked firstly for

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your plan and secondly for an answer as to whether you want some additional artillery and some tanks. As regards these in my answer I have accepted everything offered to me. The reasons for and against their acceptance we will go into later.

You are not actually asked for an "Appreciation" but since you cannot arrive at a sound plan without arguing it out, I have in my solution put down my line of argument. I have done this rather more fully than is necessary, or than there would possibly be time for in the case in point.

From the examiner's point of view he will, so long as you keep it short and to the point, welcome this method of answering, because he can thereby make sure that you have not hit upon a sound decision by luck.

One last word, let me make it perfectly clear that the suggested solution given below is only one of the proverbial twenty equally sound ones that can be put forward in every such case.

To those who are actually working for the Staff College Examination I suggest that they should now close the magazine and, having decided what time they will allow themselves, produce, in that time, the best answer they can to the problem given at the end of this article. This they can compare with the suggested solution given in the next paragraph, remembering that this is worked out in more detail than could be expected of a candidate in the examination.

7. *Appreciation.*—By Col. Comdt. 1st Inf. Bde.

AUSSONCE 1645 hours.

(*a*) *Primary considerations.*—Only about 1½ hours of daylight. So no time for reconnaissance. So must fix dispositions off map and at once. But most urgent point is decision regarding artillery and tanks. Tanks 4½ ms. artillery 5½ ms. from AUSSONCE. If to be used Co. and Batty. Hqrs. must come up at once. Decide to accept. (For reasons see para. 8.) Shall guns and tanks be ordered to move at once or after dark? Decision—guns now, tanks

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after dark: F. A. Bde. at 6 m. p. h. to AUSSONCE. M.A. Batts. to follow and halt with head in woods, 1 m. S. W. of AUSSONCE.

(*b*) *Enemy.*—Hostile Troops at BIGNICOURT 4 ms. from outpost line along Roman Road. Probable objective, if they attack, high ground N. and N.-W. of AUSSONCE, which commands road thence to HEUTREGIVITLE. Best line of advance for them down Roman Road. Next, by LA NEUVILLE-AUSSONCE Road.

Deduction.—Portion astride Roman Road most important part of front and must be securely held. After that, right flank. Must concentrate artillery fire on right and centre. Reserve, and some M.Gs., must be on or near Hill 150. Active patrolling during night along all roads and tracks, but especially on road to JUNIVILLE.

(*c*) *Frontage. Allotment of Infantry, etc.*

(*i*) *How many Bns. required in front line?* Front about 4 ms., as must hold AUSSONCE-LA NEUVILLE road by night, more than half through woods, 4 ms. = 7,000 yards = 3,500 yards per Bn. at present and junction of Bns. will come near danger point. A. and B. Bns. less 100 men each. Line on which Div. will fight only 2 ms. back. Not much elbow room.

Deduction.—Must put up another Bn. Even then B. frontages will be at least 1 m.

(*ii*) *Which Bn. should go?* D. nearest and freshest and in AUSSONCE, which may be shelled or bombed any moment. C. Bn. near Hill 150. Better leave it there.

Deduction.—Will put up D. Bn.

(*iii*) *Where should D. Bn. be put up?* Put in fresh Bn. at danger point astride road? Or leave Bns. that know ground as far as possible where they are and put D. Bn. in on right? Not much in it.

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Deduction.—Put D. Bn. astride road. A. & B. Bns. close to right and left respectively. Must allot frontages off map so will try to fix visible points of junction.

(*iv*) *On what general line should outposts fight?* Not easy to fix off map. But must be done. Bns. still on wide front, so line must be close up. Bns. in front line may not have enough men to hold far back, so best to name important tactical features.

Deduction.—Following to be held at all costs:—Spur 1½ ms. E. N. E. of AUSSONCE, Junction of Roman and Main Roads, Hill 150, spur 1 m. E. of MENIL LEPINOIS.

(*v*) *Where should Reserves be posted? What should be their rôle?* Hill 150 crux of situation. So must hold that first and foremost. If we also hold AUSSONCE, where 2 main roads meet, enemy can't get far. Counter-attack may be required to re-establish line astride Roman Road, or in direction of LA NEUVILLE. But not likely before dawn.

Deduction.—C. Bn. primary rôle to hold Hill 150. Use other arms to hold AUSSONCE. C. Bn. also to reconnoitre for counter-attack N. E. & East.

(*vi*) *Machine guns; should they be brigaded?* Not advisable to touch M.Gs. of A. B. or D. Bns. C. Bn. can be ordered to put 4 M.Gs. on Hill 150 for its defence. Bde. M.G.O., as soon as battalion frontages are allotted, will co-ordinate the lines of fire of their M.Gs.

(*d*) *Allotment of Artillery*—

(*i*) What to do with Pack Batt. now split up with A. & B. Bns? Better get together for night: Hows. most useful in woods at heads of valleys on left.

Deduction.—Allot Batt. to B. Bn. Then no need to give it any more artillery.

(*ii*) *How best to dispose Light Artillery?* Have got 2nd F. A. Bde. coming up, so can spare some 18 prs. for anti-tank work; shall want bulk of artillery fire astride Roman Road, with some on AUSSONCE-LA

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NEUVILLE Road and some on tracks leading to Hill 150. Best leave 1st F. A. Bde. where they are now as they will be registered: 2nd F. A. Bde. coming up late should come into action near main road.

Deduction.—1st F. A. Bde. support D. Bn. and right of B. Bn. 2nd F.A. Bde. support A. Bn. 1st F. A. Bde. on demand from A. & D. Bns. may use up to four 18 prs. for anti-tank defence. Each Bde. to have 1 Batt. superimposed and available to cover B. Bn., if required. 2nd F. A. Bde. not to be east of AUSSONCE.

(*iii*) *Medium Artillery. How to use it?* As it will be up late, should be disposed on or near main road and behind line on which Div. will fight. 60 pr. Batt.—best used for harassing fire. Targets western outskirts of JUNIVILLE and Road Junction 1 m. south. can use up to 25 rs. p. g. during night.

6*th How. Batt.*—Similar targets and also be prepared to protect front of D. Bn. and to fire on western exits of LA NEUVILLE.

(*e*) *Sqn. Cav. What to do with them?*

Should be rested during night and must water; but some must watch LA NEUVILLE-PONT FAVERGER Road as 2nd Inf. Bde. is 4 ms. back.

Deduction.—Detached post to be left at Junction of track and road at 3 E. 2. 9. remainder to withdraw at dusk to southern outskirts of AUSSONCE; in case of attack to hold knoll ½ m. E. S. E. of village.

(*f*) *F. Co. R. E. How to use it?*

So much would like it to do, must put work in order of priority and leave it to Co.-Comdr. to allot as he thinks best.

(*i*) Tank obstacles on both main roads, D Bn. front first. Lay tank mines if available astride LA NEUVILLE Road.

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(*ii*) Mark tracks through woods on D. Bn. front and on Hill 150.

(*iii*) Assist C. Bn. in preparing defences on Hill 150.

(*iv*) Exploit water supply in AUSSONCE.

(*v*) Prepare for defence and hold N. E. exits from AUSSONCE.

(*g*) *F. Amb.*

Be prepared to open an A. D. S. at west end of AUSSONCE.

(*h*) *Bde. Hdqrs.*

In one of last houses at S. W. exit from AUSSONCE. an alternative position to be prepared near junction of tramway, track and road 1 m. N. W. of AUSSONCE. in case village is shelled.

(*i*) *Transport.*

Meeting Point at west end of AUSSONCE. Train to return to shelter of woods after delivering rations. Echelon B. of 1st Line Transport also to go back there.

(*l*) *Tank Co.*

Officers will be up ahead to reconnoitre: what rôle should be allotted? Unsuitable for use at night: wooded country on northern portion of front unsuitable ground for tanks, enemy and ours, astride AUSSONCE-LA NEUVILLE Road.

Deduction.—Hold Co. in reserve just S. W. of AUSSONCE. To reconnoitre lines of advance for counter-attack towards LA NEUVILLE and also for one section, astride main road, on D. Bn.'s front.

(*l*) *Summary af Plan.*

Outpost Line to be held by three battalions, D. Bn. going up between A. and B. Bns. astride Roman Road. C. Bn. to hold Hill 150 and to be prepared to counter-attack. N. E. and East.

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1st F. A. Bde. not to move and to cover D. Bn. and right of B. Bn. 2nd F. A. Bde. to come into action near AUSSONCE and cover A. Bn. Pack Batt. to cover B. Bn. M.A. Batts. near main road 1½ms. S. W. of AUSSONCE.

Sqn. Cav. less detached post on LA NEUVILLE-PONT FAVERGER Road, to AUSSONCE.

Tanks just West of AUSSONCE and reconnoitre towards LA NEUVILLE.

F. Co., F. Amb., Transport and Bde. Hdqrs. as given in appreciation above.

Dispositions are shown on Map B. at end of article.

8. *Question 1 (b) Answer re extra artillery and tanks.*—This apparently innocent question requires quite a lot of thought before a sound answer can be given to it. A plain answer one way or the other, would be a simple matter, but the examiner has unkindly asked you to give reasons for your decision. Let us consider the artillery first.

You are offered an additional F. A. Bde. and 2 Med. Batts. The situation at present is that you have 1 F. A. Bde. and one Pack Batt. to cover 7,000 yards of front, which is absurd as Euclid would say. Acting on the good old fashioned principles of taking all you can get, you should obviously say yes. But a moment's thought shows you that the addition means loading yourself with nearly half the artillery of the division. Also can these guns be up in time to be of any value to you to-night? It is now about 17·00 hours. It will be dark by 18·15 hours, *i.e.*, you have 1¼ hours more daylight. Supposing that Division Hdqrs. have done nothing towards warning the Commanders concerned and that none of them are already up on their own, it will take you at least 30 mins. to get them up (5 ms. for a M. C. D. R. to HEUTREGIVILLE and 5 ms. back in a car at 20 m. p. h.) and another 15 mins. at least for the battery staffs to get up. So it will be a near thing and the light artillery will obviously not be able to do any close shooting. But on the whole its well worth it. With the extra brigade, too, you can afford to use several 18 pr. guns for anti-tank work.

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But you must decide and act quickly. The 1st F. A. Bde. can probably reconnoitre positions and possibly an O. P. also for the 2nd F. A. Bde. so as to save time.

As regards the two M.A. Batts. you may either tell Division Hdqrs. where and when you will want their fire, leaving it to the C. R. A. of the Division to arrange matters with the battery commanders direct, or you may order them up as well. In the latter case the 1st F. A. Bde. Commanders who is acting as your local C. R. A., will give them their orders. I have in the appreciation already suggested their rôle and targets.

Now as regards the Tank Company. This again is perhaps an overgenerous offer on the part of the Divisional Commander, who may be accused of overloading his Adv. Gd. commanders. But as they are offered, I would accept them. Tanks are at present by far the best antidote to tanks. You will feel much more secure on your right flank, where the open country lies, if you have a company or even a section of tanks in reserve near your Bde. Hdqrs.

I have little or no intention of using them by night, however desperate the situation, but they may be of great value to restore at dawn a possibly "obscure" or even shaky situation. And if they are not up with you to-night you may be quite sure they will be too late to use at dawn to-morrow.

But again they will be of little use to you until long after dawn unless you get Co. and Sec. Comdrs. up in daylight to reconnoitre.

9. We have now pretty well got to the bottom of the problem set and have produced what should be a sound and workable plan, in enough detail for orders to be written on it, if there was time for writing them, which in practice there would not be.

But since working out such problems off the map, even against time, is apt to introduce an air of unreality, I think it may be of value to try and paint a picture of the scene at Bde. Hdqrs. at the end house in the village while the above plan was being worked out. One is inclined to forget all that must be considered: all that would be happening: the constant interruptions both by your friends and also by the enemy: the stream of information

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both from front and rear: the arrival of prisoners from the front: of staff officers, artillery and Tank Corps officers from behind, and so on, all requiring attention of some kind. We will suppose which would in reality seldom be the case—that all the Brigade Staff are present, and we will follow step by step what a good staff would be doing.

To commence with, the message must be instantly acknowledged. The Chief Clerk can do this. While the Col. Comdt. is carefully reading the order, or, better still, having it read to him while he follows on the map, the Bde. Major, should already be thinking if a warning order is necessary and which commanders the Col. Comdt. is likely to want to see and how soon. The Arty. Bde. Comdr., if not present, must be fetched at once. The Os.C. C. and D. Bns. and the Fd. Co. Comdr. can also safely be sent for. Representatives from the other units should suffice. Next he should draw his commander's attention to the shortage of daylight and of the necessity of quick decisions if Os. C. units are to see anything of the ground by daylight. The Bde. Int. Offr. meantime should be busy with his dividers, working out frontages and depths, distance forward to the reported enemy concentration and back to where the Artillery and Tank Co. now are, the time required to get them up, etc.

The moment the Col. Comdt. has decided to accept the extra units offered there is the massage to be sent to Div. Hdqrs. repeated to the units concerned so that they may have early warning of what awaits them. This must be sent by M.C.D.R. as well as by wire.

By the time the Os.C. C. and D. Bns. have arrived the Col. Comdt. will probably have made up his mind. A word of warning to the O.C. D. Bn. will allow him to get his battalion ready, or even on the move, and so save perhaps a valuable fifteen minutes.

Each of the two battalion commanders as their fate is decided, should be allowed to go at once, the ideal being that they should take with them a few short notes giving the gist of the Col. Comdt.'s decisions. But before going they should be very definitely ordered where, or at least on what road or track, they are to place their hdqrs. so that not only can the final orders be sent them

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there, but also the various Artillery and Tank Corps officers who may want later to visit them, can be directed with certainty to them.

Once the plan is made the Col. Comdt. is free to get on his horse and to use what is left of the daylight to get a look at the most important of portion of his front and to assure himself that D. Bn. is on the way towards establishing itself solidly astride the main road.

All this time too both Staff Capt. and Bde. Sig. Offr. will have been busy, the former reframing his plans for the feeding and comfort of units, the latter arranging to link up with Bn. Hdqrs. as he hears their location roughly fixed.

In fact, even a simple normal situation, such as has been discribed, entails an infinity of work and of what are called "staff duties." It is as well to remember that, quite apart from making a plan, it is in the quick and accurate performance of such details as those mentioned above, that the success or failure of the operation, the absence of confusion, the saving of unnecessary fatigue if not of life and the general well being of the formation, not to mention its confidence in the way it is being handled and fought, will lie. And without real team work and a carefully practised drill at Bde. Hdqrs., all will not go smoothly and well.

To sum up in as few words as possible. My object has been to bring out that any tactical problem, however complicated it may seem at first sight, if tackled resolutely and in a common sense logical way, can be solved without great difficulty, a sound solution given, and the reasons for one's plan made clear.

The crux lies in the time in which you can do this, that is the speed at which you can both work and write. Here comes in the knowledge of the essentials, a matter of practice and experience. A good way of acquiring this knowledge is to go carefully again over your own, or my suggested, solution and mark what you consider are the essentials, forcing yourself to reduce the amount you have written by half. In my appreciation I have tried to make my decisions in order of priority. Lastly, remember F.S.R. II. para. 2 (*iv*). "Concentration of superior force at the decisive point." Here, being on the defensive, you can but

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anticipate where that point may be. You cannot be sure. But you must make up your mind, as with your resources and the frontage you are on, you certainly cannot be strong everywhere.

NARRATIVE.

REFERENCE MAP A AT END OF ARTICLE.

1. 1st Inf. Bde. is acting as advanced guard to 1st Div. which is following up, in hostile country, a retreating but in no way disorganized, enemy in a north-east direction on the BEINE (7 miles east of RHEIMS)—EPOY (3 C)—ST. MASMES (3 D)—JUNIVILLE (2 E)—ANNELLES (1 F) Road.

1st Cav. Bde. is protecting the right flank, 2nd Div. is on left of 1st Div. Despite severe air fighting our air forces have been unable to gain any marked supremacy in the air.

The following troops have been allotted to 1st Inf. Bde. :—

"A" Sqn. 7th Hrs.

1 P. Batt. (four 3·7 Hows.)

1 F. A. Bde. (four gun batts.)

1 F. Co. R.E. (Hdqrs. and 4 secs.)

1st F. Amb.

2. On 26th February, after advancing some miles, advanced guard met with increasing resistance, and by 15·00 hrs. reported itself held up N. E. of AUSSONCE (2 D) on the line marked on map.

Advanced guard was then disposed as follows :—

A. Bn. on right, B. Bn. on left, in touch with 2nd Div. at junction of track and tramway at 2 D. 87. C. Bn. is on Roman Road, just south of Hill 150 (2 D. 93) and D. Bn. with Bde. Hdqrs. in AUSSONCE. One Sec., 1st Batt. is with each front line battalion. 1st F. A. Bde. is in action ¾ mile north-west of AUSSONCE. 1st F. Coy. R. E. and 1st F. Am., with B Echelon Bde. Tpt. are in woods 1 mile S. W. of AUSSONCE. A Sqn. 7th Hrs. has been withdrawn to right flank, about Farm LE MERLAND (3 E. 39). It is in touch with 1st Cav. Bde., which is at HAUVINE. Latter reports country clear of enemy as far east as ST. ETIENNE (3 F.) and CAUROY (2F).

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The advance has been opposed largely by automatic weapons and light artillery. No tanks have been seen, though their tracks were reported visible during the day, both on the Roman Road and S. W. of LA. NEUVILLE (2 E.).

Both front line battalions have lost some 15 per cent. C. Bn. has lost some 10 per cent from an attack by aircraft.

3. At 16·45 hours orders received at Hdqrs. 1st Inf. Bde. to the following effect from 1st Div., whose Hdqrs. are at HEUTREGIVILLE (3 D.).

Air reconnaissance reports, 16·15 hrs., a force of about 3 battalions infantry and 1 company tanks partially concealed in area BIGNICOURT-VILLE-SUR-RETOURNE (2 F.) Hostile attack to-night or early to-morrow considered likely to gain time for withdrawal of transport, delayed south of River Aisne by our bombing attacks on bridges.

1st Div. will halt for the night. *1st Inf. Bde. to find outposts* and be prepared to resume advance early to-morrow. 2nd Inf. Bde. will billet in PONT FAVERGER (3 D.) and watch roads from LA NEUVILLE and HAUVINE. 1st Cav. Bde. is moving S. E. to ST. MARTIN (4 E.). 3rd Inf. Bde. and rest of divisional troops in area HEUTREGIVILLE-ST. MASMES-EPOVE-BEINE. In case of attack 1st Div. will fight on line Hill 190 (1 mile north of PONT FAVERGER railway station)—AUSSONCE Hill 151 (2 D. 63)-MENILLEPINOIS and will require some two hours to occupy this line by night.

4. Col. Cdt., 1st Inf. Bde., is also informed that the following will be placed at his disposal, if he requires them :—

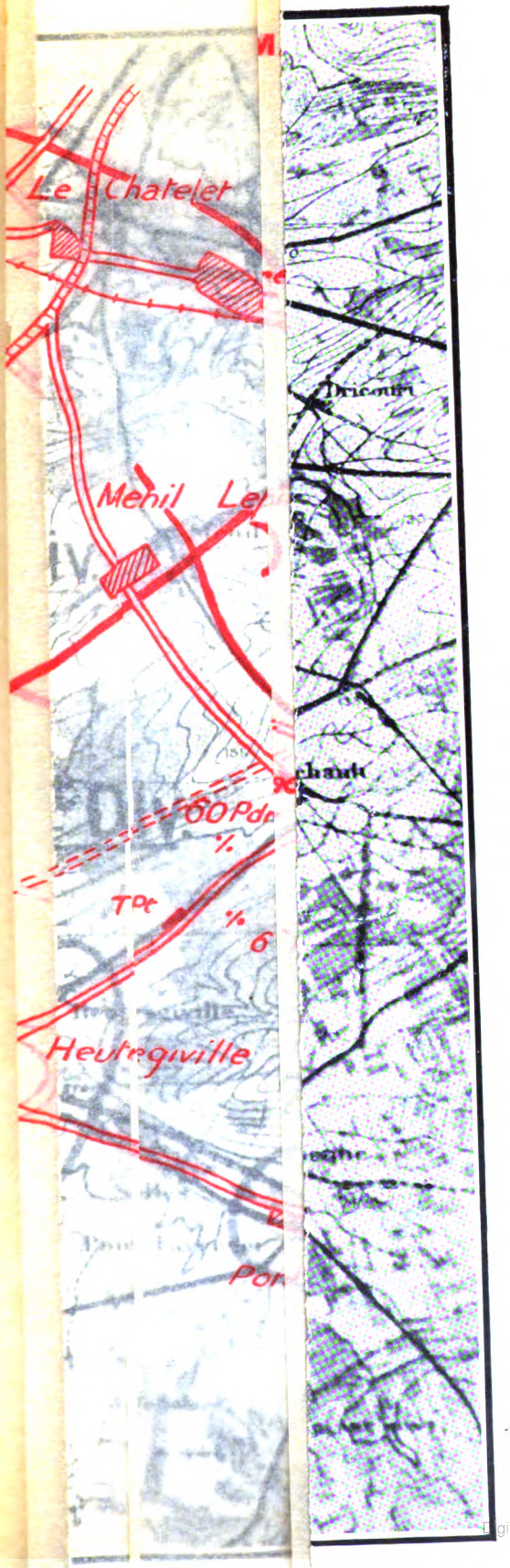
"A" Co. Tanks, at HEUTREGIVILLE (light infantry type, fighting speed 8 m. p.h., armament one 3-pr. and two Vickers); 2nd F. A. Bde.; two M. A. Batts., one 60-pr. and one 6-inch How (both horse drawn), all at ST. MASMES.

Question 1—*As Col. Cdt., 1st Inf. Bde* :—

(*a*) Give your plan, in detail, down to battalions and equivalent units.

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MAP A.



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(*b*) What reply will you give as regards tanks and additional artillery? Give your reasons for your answer.

Note 1.—The map should be used as far as possible to show your proposed dispositions.

Note 2.—26th Feb.—sunrise 07·00 hours, sunset 17·30 hours.

Note 3.—The country may be taken as open, except where woods are marked. There is little undergrowth in the woods. All first and second class roads are fit for N. T., but third class roads must be reconnoitred.

Note 4.—All troops to be taken at British War Establishments.

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SOME THOUGHTS ON FRONTIER FIGHTING, II.

By Colonel C. Kirkpatrick, C.B., C.B.E., Commanding 3/12th Frontier Force Regiment.

In continuation of a previous article on this subject, and because the service of protection bulks so largely in every phase of hill warfare, it may be of interest to describe in some detail the different methods of protection adopted on the lines of communication in Waziristan during four years of operations.

Unless close attention is devoted to this matter of security, wastage of man power is likely to occur. We have to provide protection on all sides whilst our troops advance to the attack, whilst they punish or rout the enemy, during withdrawals, in perimeter camps and throughout the lines of communication.

It will be remembered that in the Tirah campaign, the stereotyped systems of attack and defence which in those days were practised as a drill were soon discarded for other methods because of the advent of the magazine rifle.

Twenty-three years later, in Waziristan, the same reason immensely accentuated, quickly caused a revolt against having any single "normal system" of "protection on the march," and commanders on the different lines of communication evolved methods of protection adapted to the varying conditions of their sections.

Controversies have sometimes raged as to the respective merits of each system, and there are some who would like a standardized system for all occasions, forgetting that it is by the very practice of diverse methods that the tactical skill of the British has proved victorious in many lands. We do not want hide bound rules for hill warfare but we must know what possible varieties of method there are to suit different conditions.

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In Waziristan it early became clear that each Line of Communication had its own separate problems and that what was previously known as "normal piquetting" required considerable development in order to cope with modern conditions.

The various systems brought with them a multiplicity of terms which has led to some confusion of thought and must puzzle those new to frontier conditions. For example that much overworked word "piquet" has been qualified by words which have tended rather to confuse than explain the rôle intended.

We have the term :—

(*a*) "Piquet"—meaning the men composing it.

(*b*) "Piquet"—any walled enclosure on a hill top.

(*c*) "Day Piquets"—either (*i*) personnel piquetting a route during the march of a column, and which are brought in by the rearguard, or (*ii*) certain definite sangars occupied by day only.

(*d*) "Route Piquets"—identical with (*c*) (*i*) above.

(*e*) "Road Piquets" or "Permanent Piquets"—walled piquet positions continuously garrisoned commanding the road.

(*f*) "Camp Piquets"—the same as (*e*), only guarding a camp.

(*g*) "Night Piquets"—Piquet sangars, or their garrison held only at night.

(*h*) "Parent" and "Child"—piquets explain themselves.

For all of these some would seek to lay down definite rules and duties, but systems of protection which depend on explicit regulations are a source of danger.

It would be simpler and lead to a better application of the principles of war, if the term "piquet" were limited to mean a party of men told off to occupy a certain hill top or position and in occupation thereof, while the word "piquet post" could be held to mean a walled sangar occupied by a party of men.

Types of "piquet post" are often varied according to the ground occupied, but different types are not required to correspond with the nomenclature mentioned above.

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For reasons more fully discussed in the previous article, the system of advance by so called "day piquetting" alone was seldom used in Waziristan. In that system the seizure of dominating tactical features as quickly as possible so as to facilitate the march of the main body, continues just as long as the advanced guard can brush away light opposition. An advance can now be so easily checked in the hills with modern rifles, that, except when only slight opposition is met with, columns will have to occupy their piquet positions with adequately equipped troops and be prepared to leave those piquets up behind them if necessary.

Methods suitable to operations which could be commenced after dawn and were meant to cease before night-fall, *i.e.*, "day piquetting," have had to be further developed, since present day conditions enforce operations being extended over a longer time. Piquet positions, once taken, must be held if likely to be needed again soon.

If we fail to recognise these present day restrictions to movement in the hills and the delay they cause, our mistake will be comparable to that of the foreign critics, who, at the time of the Boer War, thought that it was the fear of further losses that stopped the British frontal attacks, and not smokeless powder and the flat trajectory rifle.

For operations in the hills extending beyond three days it must be accepted that connection with a base is necessary. Operations which do not extend beyond three days can only have a very limited objective and be in the nature of a surprise raid, for which piquetting methods must vary according to the problem involved. In these cases the day piquetting system will probably be used, just as it will be when marching through a hill country where the population is not definitely hostile.

It has been thoroughly proved in Waziristan that a chain of "piquet posts" supplemented by other protective measures is the most economical way of keeping open a line of Communication; and consequently, if operations are to extend beyond three days, the establishment of piquet posts will usually form a main

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part of the day's work during an advance, and the initial action of seizing the heights will be followed by consolidating a "piquet post" thereon.

I have perhaps rather laboured this point, but with a reason; because, owing to its unhappy nomenclature, "permanent piquet" appears to some people to savour of static warfare, whereas they connect "day piquetting" with movement.

This is only a superficial view, as the service of protection is subsidiary to the main operations, and it can only be the type of action which then ensues that can be open to such criticism.

In truth, the "permanent piquet" quickens movement; because, if piquet posts did not exist on the dominating tactical points, it would nowadays be beyond the capabilities of an ordinary line of communication post garrison to open the road quickly, or even open it at all. Nothing like the number of troops are required to open the roads as would be the case if the hills had to be taken daily.

The following methods of protection were adopted at various times in Mahsud Land (Central Waziristan).

("Permanent piquets" were normally about half a mile apart.)

Method 1.—"Permanent Piquets" held in considerable strength (60 to 80 rifles), the larger piquets (parent), controlling and combining with a group of neighbouring ones to protect the area. So called "child" piquets or sometimes subsidiary day piquets were also used to supplement the main piquets. Meanwhile convoys marched escorted for local protection.

The piquets being in considerable strength were able to take vigorous offensive action against small enemy bodies in their immediate vicinity.

Method 2.—When troops on line of communication were reduced, piquet strengths were cut down to approximately a platoon of thirty rifles, and more strength was put into escorting troops or Post movable columns, the piquets still being given the rôle of offensive action to be undertaken in connection with small subsidiary piquets.

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Method 3.—The mobile platoon system.—In this system, piquets were reduced to the minimum strength actually required to hold the posts (2 sections, 10 to 12 rifles). No subsidiary day groups allowed nor offensive action contemplated from posts. The strength thus saved was allotted to line of communication Post movable columns and to provision of "road protection troops." Action when required was taken by the "Road Protection Troops." These moved out daily, searched and cleared the ground forward to "liaison point," and, as they advanced, dropped at irregular intervals "mobile platoons," each of which was responsible for taking action within a certain section of the road (say 1½ or 2 miles). These mobile platoons changed their location every half hour or so, and whenever firing occurred, moved off at once to assist or combine with other platoons. There was also a mobile column in camp ready to move out at 10 minutes' notice.

Method 4.—(Road protection as generally adopted finally in Central Waziristan.)

"Permanent piquets" were reduced to the minimum required to hold the post and to give assistance in close vicinity to it (two or three sections, 10 to 15 rifles). Day groups from piquets were barred. Road protection troops moved out, searched the ground and piquetted certain subsidiary features in addition to the main tactical points already held by the "permanent piquets." Besides this, each line of communication Post had its movable column ready to move out in support at ten minutes' notice.

Method 5.—In North Waziristan, where a road existed generally permitting the use of M.T. throughout, conditions were rather different, as the road had been constructed at the request of the Wazirs through whose territory it ran, and any hostile action to be expected would be confined mostly to Mahsud raiding gangs.

Here "permanent piquets" existed as in Central Waziristan.

On the lower sections M.T. convoys were escorted by armoured cars, infantry road protection only being sent out on occasions when animal convoys passed. Here also a floating platoon existed, whose mission was to roam from place to place among the hill tops searching for raiders, spending one night in one permanent piquet, another night in some other one, and so on.

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On the upper section, nearer the Mahsud Country, road protection troops were also employed, and on the Razmak Narai, a large post of a company was maintained, from which subsidiary piquets, road protection and a "floating platoon" were found. These controlled that important tactical area.

Method 6.—On the borders of the Derajat and South Waziristan where the M.T. road and railway were open to attack by small raiding gangs, armoured cars were responsible for protection two or three days in the week, infantry on the other days. The infantry used either Lewis Gun Ford van patrols, which moved along, halted, and moved on again at intervals, or found floating platoons.

Other variations of the above methods were tried from time to time.

The systems on which the locally enlisted levies were employed on protective duties are of interest. In order to free regulars both in North and Central Waziristan a considerable number of these "Khassadars" were enrolled. In North Waziristan, where the local population had a very considerable stake in the construction of the road and the contracts appertaining thereto, it was possible to employ khassadars as garrisons of such permanent piquets as were not of primary tactical importance. They were not used as "road protection troops."

In Central Waziristan, the reverse was the case, our troops being established in Mahsud Country by force of arms and the road in that district being constructed without regard to the Mahsuds' wishes on the subject, it was vitally necessary that all permanent piquets should be held by regulars. Here, therefore, the irregulars were used for "road protection" in replacement of regulars, and the Mahsud "Khassadar" was like Uriah the Hittite, sent out to discover what mischief was afoot, though, be it said, he seldom suffered Uriah's fate at the hands of his fellow tribesmen.

There were certain noticeable features with regard to the six methods of protection described above.

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Method 1 necessary when heavy determined attacks may be expected on line of communication, is only possible when large numbers of troops are available.

The offensive action of even such piquets cannot extend much more than a mile or so beyond the piquet line.

Method 2 is uneconomical of troops and a source of danger.

It needs little calculation to show that a two battalion line of communication garrison, responsible for five miles road each side of its post, cannot maintain piquet posts of that size in addition to piquets for protection of the camp, local camp protection, adequate road protection troops and other duties.

Method 3 sufficed in open rolling hills, but it did not fulfil all requirements when heavy attacks were made in the difficult defiles of the Takhizam.

With *Method 4* it was found that 25 men a mile were absorbed in permanent piquets and that troops on line of communication could be disposed as follows:—one-quarter in "permanent piquets," one-quarter camp protection, normal camp duties and fatigues, one-half available to move out of camp as road protection or movable column.

This proved the most economical and efficient distribution for general purposes.

Method 5.—The best method of protecting long M. T. Convoys on hill roads has yet to be solved. Armoured car escort combined with piquet posts will of course be suggested. But it remains to be seen how these will deal with organised raids on convoys, or what further protective measures will be needed.

Method 6.—The Ford vanette has been condemned as an uneconomical form of M. T., unhappily for the infantry man, who appreciates its usefulness in small missions.

As an economical method of providing infantry protection on long stretches of winding road the Ford vanette is invaluable, and properly handled it is not so vulnerable as one would imagine.

Of the above methods, the second has been perhaps the most subject to criticism.

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First of all there is the matter of the strength of the piquets, *i.e.*, a platoon of twenty-five or thirty rifles.

For self-protection so great a strength is rarely necessary.

The garrison of "Fig" piquet on the Wana line is an example.

It consisted of 15 men with a Lewis Gun. It was continuously and heavily attacked throughout a whole night in July 1921 by about 200 Mahsuds, who made desperate efforts to overwhelm it by fire and assault. The resolute defence of this small garrison shows that a well constructed, wired piquet post can be adequately maintained by a garrison of that size in face of heavy attacks.

The argument that a piquet of the size of a platoon enables that piquet to "be offensive" and allows of reconnoitring and patrolling, raises a controversial point.

The general experience in Waziristan was that offensive action from piquets of this size is not advisable, and that reconnoitring should only be done if hidden ground exists close at hand which must be searched.

In discussing this, the question of day piquets put out from a "permanent piquet" may also be included. These were not allowed though the temptation was often great to establish them, because in practice it was only a question of time before they were ambushed going out from or coming in to their post.

Now a small party of ten or fifteen men cannot go out into the hills and look after themselves when enemy armed with magazine rifles are about.

Let the school of thought that advocates offensive from piquets remember that such an offensive starts with every conceivable disadvantage and is in opposition to the principles for such laid down in Field Service Regulations.

"Surprise" is lacking, as they issue from their piquet post in full view of all. "Economy of force" and "concentration" are lacking, for to maintain a small increased number of men in

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all piquet posts uses up men who were better employed actively in movable columns where action is less restricted than from a hilltop. Also the offensive can be taken by only a portion of the piquet.

"Security" is doubtful, for the enemy is fully aware of every possible means of exit from the piquet post position, and can watch and anticipate movement. "Mobility" is lacking because movement is restricted to a certain distance only from the piquet post. Add to this the ever present handicap in all frontier war, the fact that wounded cannot be left, and it becomes plain that it is unsound to send a small party of men half a mile or more beyond the piquets where they are liable to be "shot up" from other heights beyond, by enemy lying up secure amidst rocks or bushes and beyond reach from the piquet post itself.

What is the situation of such a party (and of the piquet), with say two or three men hit in the forward party?

They cannot get back unaided. The garrison left in the post was presumably the minimum necessary to hold it, and if that remnant go out to help, they may quite likely fall into the very trap the enemy has prepared for them. In any case they are not likely to be able to effect much. It is much more likely that the movable column will have to be summoned to extricate them with inevitable further casualties, whilst the enemy has suffered little loss.

The Mahsud knows well that the wounded man lying out is a safe "draw." He has got to be brought in, and if such an incident can be got to occur on ground suited to his wishes, he can bring about unpleasant situations, where every disadvantage is with the regular troops.

The object of piquets must not be forgotten.

In old Field Service Regulations, their rôle was said to be to deny all positions to the enemy whence effective fire could be brought to bear on the column.

With long range rifles you can no longer effect this desirable achievement, but the principle remains the same. Piquets, when located, should rest content with keeping the enemy at a respectable

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distance from the column by fire, and should not endanger themselves or the column by further extending their responsibilities by employing detached "day groups" and by sending out unnecessary reconnoitring patrols which have to be got back eventually.

The *raison d'etre* of piquetting is protection. The more men spared from that, the stronger will the striking force be, which has much greater freedom of action and manœuvre than a normal piquet can have, and, as hinted, the power for harm of an ill-advised offensive from a piquet is far reaching. Piquets garrisoned to the strength of a small post are different propositions. They should be considered to be, and to act as, small posts.

The psychology of the soldier has to be considered in hill warfare as anywhere else. Every officer knows that his men will follow him and accept necessary losses provided they know the results will not be barren and that the order given is based on commonsense. They cannot suffer losses due to faulty direction without loss of moral. If men are asked to reconnoitre from piquets as sometimes done they will quickly realise that under modern conditions such reconnaissance is of little use. The only thing they will discover is that the rifle can be most unpleasantly accurate at a very considerable distance in the hands of their invisible enemy and that they are generally anything but invisible to him as they move along a hill side.

The best means of discovering enemy movement in the hills is the full use of field glasses, supplemented as far as possible by aeroplane reconnaissance, but the latter can only furnish positive not negative information.

The protection of piquet posts under construction presents problems of its own.

During General Skeen's advance up the Takhi Zam in 1920, in the severe fighting at Ahnai Tangi, his troops established Flathead piquet and others in the face of close and intense fire, the men pushing up stones one by one in front of them, until, as dusk came, there was an adequate stone sangar to cover the piquet left up for the night.

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Here no protection was possible for the builders other than covering fire given from the piquet position itself.

Where however the piquet position has been taken and troops pushed forward beyond it, the officer commanding the covering party during its construction has often considerable difficulty in deciding what position he should take up. There were one or two instances in Waziristan where covering parties failed to fulfil their role, because they did not locate themselves in front of the post whose construction they had to cover.

On the other hand, in several cases losses were incurred through parties being pushed unnecessarily far forward in the desire to safeguard absolutely the building party from sniper's fire. Not only did losses occur during the construction, but the extrication of the forward parties with their casualties occasioned more trouble and further casualties.

Covering dispositions should be made after very full consideration of possible developments during the period when protection has to be given.

One matter as regards protection in the Makin operations of February 1923 is worthy of notice.

It was found that where a column advanced up a re-entrant in order to destroy a village it was not sufficient to piquet the flanks of the re-entrant only. To illustrate what is meant: imagine a pitch fork with four prongs and the line of advance lying between the two centre prongs, the four prongs representing spurs running down from the main hill. It was sometimes necessary to hold and piquet the two outer prongs strongly as well as the two centre ones, in order to secure the safe withdrawal of all troops when the time came.

This complicates a withdrawal considerably, as will be readily understood, but circumstances may demand such double protection to flanks.

In connection with these punitive operations, two other points may be mentioned. The first is, what is the right time to allow between lighting up a village and the time for the withdrawal of the protective troops to start?

The withdrawal must be so fixed that time has been given for the fires to be well ablaze and beyond hope of putting out by the enemy.

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On the other hand, the first sign of smoke rising informs the enemy that the time of withdrawal is near, and they steal forward on to the outer piquets ready to harass and attack directly movement is made.

In the first two days' burnings in the Makin area, when the hour for the retirement to start was fixed for half an hour after the houses were fired, it was found that the enemy had crept so close up (sometimes only 60 or 80 yards off), that the retirement was closely harassed and casualties were inflicted on us.

A difference of twenty minutes, and in one case of only ten minutes, was then made in the timing of lighting up and withdrawal. It was found that, provided the firing was well prepared, fifteen minutes was a good margin to allow. Fires would then be well ablaze by the time the enemy could reach the village, and yet in that time no great number of enemy would be able to get too close to the outer piquets before those piquets had to retire.

The second point brought out at Makin, which was also even more clearly exemplified in another action near Kotkai, was that in withdrawing extended "calipers" formed by piquets or troops in covering positions, the fixing of a time for simultaneous withdrawal of two or more parties must always be a cause of anxiety.

Even with a pre-arranged signal this is not without danger.

What may happen is that even if ten minutes before the fixed time, messages are sent in to say that all are ready to retire, yet, in the last few minutes, casualties may occur in any exposed flank position and it is then too late to stop the withdrawal on the other side which was ordered to commence withdrawing simultaneously.

This is what happened near Kotkai. One whole flank came back and was left unoccupied for an anxious twenty minutes till troops could again be got into position, because, at the very time the withdrawal was to have started, several casualties occurred elsewhere, and the withdrawal on the left could not be stopped in time.

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It is really better to order that one position only is to be evacuated at a certain hour, and, dependent on that, others move; or, if simultaneous withdrawal is essential, the difficulty may be partially got over by getting a message sent in from the two positions concerned ten minutes before the hour fixed, saying they are ready to go, which is again confirmed at that hour by each firing a red very light. Then H. Q. can give the signal "go" by firing an agreed signal from its central position. Visual signalling is too slow for the final order, and the telephone is not sufficiently reliable.

Camp protection at times was a cause of anxiety.

It was a curious thing that during the Mahsud campaign, where the enemy developed tactics and fire power far in advance of anything previously met with on the frontier, at no time did sniping of camps occur to any dangerous extent.

In view of the tactics the enemy usually employed when carrying out a serious attack on a convoy on line of communication, which were that the neighbouring piquets were neutralized for the time being by parties specially told off for the purpose whilst the attack was taking place, it was only reasonable to suppose that action on the same lines might develop against camps at night.

Possibly the Mahsud may have been right in considering such action not worth the expenditure of ammunition, because, in Waziristan, in all cases camps were exceedingly well provided with cover both on the perimeter and inside the camp.

This was due to the fact that Providence has provided Waziristan with an illimitable number of loose stones everywhere, and the fullest use was made of these.

Such protection is not so readily come by in many other parts of the frontier, and without it, organised sniping might nowadays cause much trouble.

In the first place it will be realised that for several reasons a column moving into a new camp is much more vulnerable than it was formerly. There is for one thing a relatively larger proportion of units who cannot provide their own perimeter

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protection. Formerly, if entrenching had to be done, the construction of a defensive perimeter before dark giving some protection from sniping fire, was achieved by everyone digging in; the modest allowance of battalion tools being supplemented by the light Sirhind tool with which each man was provided. Now that the Sirhind tool is no longer carried the question of the provision of cover for camp and piquets becomes very acute.

In the stage of development which tribal tactics have now reached, we must anticipate fire attacks at night against camps. Judging by Mahsud methods, we may anticipate something as below.

Shortly after dusk three or four small parties of snipers will creep up to within sniping distance of certain selected camp piquets. Some time later, desultory sniping will commence against these piquets during which time the main parties of the enemy are creeping in between the piquets.

At a given signal, the sniping of the piquets will be increased to such an extent that the latter are wholly occupied and neutralized thereby. Then for a brief space an intensive magazine fire may be opened on the camp from 800 or 1,000 yards distance by the main parties of the enemy, who will then melt away under cover of those snipers engaging the piquets and before the troops in camp can make adequate reply.

The best reply that can be made to such attacks is the controlled fire of Lewis Guns with tracer ammunition, supplemented by Vickers Gun fire, but Lewis Guns will probably give the quickest and best results, and teams should be kept ready to deal with such emergencies.

In our Company Training Camps we can easily train our Lewis Gunners to considerable accuracy by expending a small amount of tracer and ball ammunition at night against hurricane lamps placed on a hill side 600 or 700 yards off. By this practice, accuracy is not only achieved, but many weaknesses in the ability to correct mechanical stoppages in the dark by the teams are discovered.

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We must be able to use these weapons at night so that we can fully develop the possibilities of tracer ammunition for night defence.

Also we must be able to move and work at night so that under the screen of darkness we may escape some of the disabilities of modern conditions in the hills.

Perhaps, if the gods are good we may yet see our Pack Artillery helping the long suffering infantry soldier out of his difficulties with a smoke screen.

The latter will then feel that he is beginning to get "upside" with the situation.

Finally, in considering the problems that face us across the frontier to-day, let us remember two sentences in our latest Infantry Training—

(1) that "the same principles will apply to attacks against an enemy whose armament and organisation is inferior to that of a European Army;" and (2) that only "against certain natures of opposition and under certain conditions infantry units, *by the proper use of their own weapons*, will retain mobility."

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OUTLINE OF THE HISTORY OF THE BRITISH ARMY FROM 1858.

By Captain C. A. Chapman, 1/1st Punjab Regiment.

Introduction.

Probably two of the subjects in the Staff College Examination and Promotion Examination which cause most despondency to the officer studying for them are Organisation and Administration and the History of the British Army. To find satisfactory books to use as a basis of study is nigh impossible. Major Linds ll has recently remedied the deficiency as regards Organisation and Administration, but the History of the British Army remains untouched. To cull the details out of text-books of British History is laborious and unsatisfactory; Fortescue's volumes do not touch the required period and General Anderson's "Outlines of the Development of the British Army" is but the synopsis of four lectures and therefore, much too sketchy for the aspirant to a p. s. c. It is therefore thought that the following notes may assist officers in working for examinations.

The period required for examinations is from 1858 the date of the amalgamation of the Queen's and Hon'ble East India Company's forces in India, to the present day and the first outstanding date after the amalgamation is the conferment of the portfolio of Secretary of State for War on Mr. (afterwards Lord) Cardwell in December 1868.

However, to understand and appreciate the Cardwell Reforms of 1870 and 1881 it is necessary to have at least a nodding acquaintance with the pre-reform era.

I.

The system of army organisation in vogue in 1854 was both complicated and cumbersome. Excluding sub-departments and

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the Crown, there were five administrators, if one may use the term, of the army :—

(1) The Secretary of State for War and the Colonies whose control over the army, except in time of war was but vague.

(2) The Secretary of State at War who was the Parliamentary representative of the Army and who exercised a large degree of financial control.

(3) The Board of Ordnance which, under the Major-General of Ordnance was responsible for the supply of material, administered the artillery and engineers and financially was quite independent of either of the Secretaries of State.

(4) The Commissariat Department which had its H. Q. at the Treasury.

(5) The Commander-in-Chief who was responsible in financial matters to the Secretary of State at War and in matters of discipline, command and patronage to the Crown.

Thus it is seen that there was bound to be overlapping, opposed interests and consequent inefficiency in administration.

At this time too, the so-called "Regimental System" for the supply of drafts was in vogue, which in reality was no system at all. Regiments were nearly all of single battalions, were not localised and had no fixed stationary depôts, units at home were at a very low establishment and on a unit being ordered abroad, volunteers were called for from other home units and from those already in the foreign station and about to be relieved. Financially, this saved money, for sufficient volunteers could always be found for minor expeditions to fill up the cadres of home serving units, and as regards foreign reliefs the more men in the foreign station who volunteered to transfer to the incoming unit, the less Government had to expend on passages, War on, for those days, a large scale immediately exposed the weakness of the system. The strain came in 1854 with the outbreak of the Crimean War. Every unit wanted every available man and none were left to volunteer for transfer to other

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units at the front despite the fact that the total number of British troops in the Crimea at no time exceeded 30,000. The War Office offered bounties to militiamen to transfer to the line but under the then existing laws, Militia C. Os. could and did prosecute men for transferring.

Popular clamour against this hopeless state of affairs and the general mismanagement of the whole war forced the authorities to overhaul the system of administration and as a result :—

(1) The Board of Ordnance was abolished, its functions being divided between the Secretary of State for War and the Commander-in-Chief.

(2) The Commissariat Department was transferred to the War Office from the Treasury.

(3) The Secretary of State for War and the Colonies became the Secretary of State for the Colonies.

(4) The functions of the Secretary of State for War and the Colonies (so far as the Army was concerned) and the Secretary of State at war were amalgamated at the War Office in the person of a Secretary of State for War.

(5) A soldier was appointed permanent Under-Secretary for War.

(6) The administration of the Army was divided between the Secretary of State for War at the War Office and the Commander-in-Chief at the Horse Guards.

In 1857 came the Indian Mutiny, the responsibilities of the Crown Forces were augmented and as a result that most difficult problem—draft finding was intensified. Up to this date there had been two forces in India—the Queen's troops (all Europeans) and the Company's troops (Europeans and Natives). The latter, although they had done good work in the past, had become pampered, inefficient and expensive and their discipline was bad. As a result of the mutiny, the two forces were amalgamated and reorganised on the following general lines :—

(1) European troops to be not less than one-half the total number in the north nor less than one-third in the south.

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(2) All artillery except five mountain batteries in the Punjab to be entirely officered and manned by British.

(3) All troops in India whether European or native to be Queen's troops.

(4) Officers of the late Company's armies who so desired were transferred to the Queen's army.

(5) Addiscombe College, the training school for the Company's military officers was closed down and the army in India officered by transfers from British Regiments.

In 1859, the British Infantry totalled 132 battalions, of which 102 were abroad, 72 being in India and 30 in the Colonies. Thus it is seen that the governing factor in administration was bound to centre round draft finding and reliefs for units on foreign stations.

The same year saw the beginning of a Reserve (not to exceed 20,000) improvements in discipline (flogging was practically abolished) and great improvements in the sanitation of barracks.

At the very time when the British army was dealing with the Mutiny there were difficulties in China, our relations with the U. S. A. were not happy and the French press began to again adopt a menacing tone. Just as in 1852 the appearance of Louis Napoleon as Emperor of the French was required to force the "powers that be" to transfer the Militia from the Home to the War Office and to authorise the raising of its strength by volunteering, so in 1859 it required a commercial panic and the open threats of French officers to joggle the War Office and to force it to authorise the Lords Lieutenant of counties to raise Volunteer Corps. The imminence of invasion and the absence of trained soldiers overseas gave rise to a short period of civilian keenness and in a very few months 120,000 men supplying their own clothing and equipment became volunteers. Very soon, however, the novelty wore off, the well-to-do middle class ceased to become volunteers and in 1867, in order to make it possible for the artizan class to join Volunteer Corps, the War Office made a grant of thirty shillings per man enrolled.

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So far there had been no attempt to reorganise the forces for war. The total number of reserves for the Regular Army mounted to 3,000 only and this included militiamen who had undertaken to serve overseas in emergency. Recruiting was haphazard and terms of enlistment were for life. In 1866 came the shock to Europe of the defeat of Austria by Prussia. The war had been short, sharp and decisive. All Europe began to seek the causes of Prussia's rapid success. Britain realised her military weakness and in 1866 a Royal Commission on Recruiting discovered that there was no army reserve and that no organisation existed for meeting our military liabilities. As a result, the Army Enlistment Act of 1867 was passed which—

(1) fixed service with the colours for all arms at 12 years, instead of life, with the object of ensuring that eventually there would be at least a certain proportion of trained men amongst the civilian population.

(2) formed the Militia Reserve and held out inducements to militiamen to undertake the liability of reinforcing the army in the event of war.

The following year, the Ordnance, Supply and Commissariat Departments were combined in the Control Department. The same year (1868) Mr. Gladstone became Prime Minister with Mr. Cardwell as Secretary of State for War.

To make clear the scope of the subsequent reforms it may be useful to summarise the situation as it presented itself to Mr. Cardwell in 1868 on his assumption of office :—

(1) The Queen's Army had absorbed the H. E. India Company s forces.

(2) About two-third of the army was abroad, recruiting was bad and drafts difficult to find.

(3) The Regimental System of draft finding was in vogue.

(4) Units were not localised (as were the Prussian units which made possible rapid mobilization and the defeat of Austria) and depôts had no definite home.

(5) Enlistments were for 12 years all with the colours.

(6) As regards officers, the "Purchase System" was in vogue.

(7) Reserves were practically non-existent.

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(8) The Militia was under the War Office but was untrained.

(9) A Volunteer Force had been raised but nothing was laid down as to the proportion of the various arms composing it.

(10) The War Office was under the Secretary of State for War and the Horse Guards under the Commander-in-Chief.

(11) The Control Department had been established under a Controller (Surveyor) General—a solder with a seat in Parliament.

(12) The Financial Secretary was a civilian with seat in Parliament.

(13) Generally—no training for war—regulars, militia and volunteers were three distinct organisations in no way co-ordinated.

II.

Mr. Cardwell was much handicapped by the policy of economy to which Mr. Gladstone was committed. Nevertheless he immediately set to work to make the army a real live force capable of safeguarding the Imperial commitments of Great Britain. His first step was to stimulate recruiting by the offer of better pay and to provide a real reserve for the Regular Army by the Army Enlistment Act of 1870 which, whilst retaining the period of 12 years as the term of enlistment, divided that period into two portions of seven years with the colours and five with the reserve His attempt to pass a bill through Parliament for the abolition of the Purchase System in the case of officers was defeated by the House of Lords, but a Royal Warrant was signed giving effect to the rejected bill and thus serious anomalies in rank and promotion were done away with—much to the chagrin of the Guards.

The following year (1871) he dealt with the question of the co-ordination of the armed forces in the country and took first steps towards solving the problem of draft finding. By the Regulation of the Forces Act of 1871 the functions of the Regulars, Militia, Volunteers and Yeomanry were defined and to a certain extent co-ordinated. The Militia was placed under the War Office by the same Act and the net result was a greater nomy in man power.

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In 1861 the principle was initiated that those Dominions which had achieved self-governing status should be responsible for their own military defence. This perfectly sound principle, however, was inoperative until 1871 when regular troops were withdrawn from Canada and arrangements were made for the reduction of the garrisons in the other colonies as their local forces became efficient.

The next year, the report of the Localisation Committee was adopted whereby Great Britain and Ireland were divided into 65 Brigade districts, each district comprising 2 Regiments of the line and 2 Militia Battalions, plus Volunteers. Twelve Artillery districts were also formed for recruiting purposes but the cavalry were allowed to recruit anywhere and the Guards, 60th Rifles and the Rifle Brigade were given extended recruiting areas not restricted by Brigade districts. Thus line Regiments were affiliated in pairs, had a definite recruiting area and a fixed depôt. This reorganisation was a result of the Franco-Prussian War, the rapid success of the Prussians being due, as in the case of the war against Austria, to the fact that the Prussian Regiments were mathematically localised with the result that their rapid mobilisation had meant the defeat of their enemies before the field armies of the latter had had time to concentrate. Theoretically, the result of the two line organisation in the British Army plus the withdrawal of a number of Colonial garrisons meant that each Regiment of two affiliated battalions had a fixed depôt and recruiting zone and that ultimately linked battalion would relieve linked battalion on foreign service. This, although it did not become universally effective in the army until 1881, was a great improvement on the "Regimental System" and worked well so long as there was no war, but the Egyptian campaign against Araby Pasha threw it out of gear.

Nor was Mr. Cardwell content with merely a good paper organisation for the armed forces. During his first tenure of office new drill regulations were introduced, training began to become systematised and 1872-73 saw the first Autumn Manœuvres on a big scale. As a result, the force which left for the Ashanti campaign in 1874 was the best organised expedition which up

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to that time, had left Britain's shores. Alarums of war with Russia in 1875, 1876 and 1878 put Cardwell's reserve system to the test and it proved its value and efficiency.

One of the great disadvantages under which the Army in India had laboured up to 1858 and one of the causes of the inefficiency of the Native Army at that date was the fact that a large number of officers—British and native—who although, on account of their old age, were unfit to perform military duties of any kind, were still allowed to serve. All the same, Cardwell during his first term of office and his immediate successor had not learnt the lesson of India and in all ranks, junior commissioned ranks included, there was a large number of men who were no longer fit for active duty. A Royal Commission on promotions recommended compulsory retirements and in 1877 a Royal Warrant gave effect to the Commission's finding from the 1st of January 1881—a further step towards efficiency.

1881 also saw the logical conclusion of the system of 1871 whereby the whole country was divided into 65 Brigade districts each containing two line Regiments. Previously all Regiments had retained their old numbers, but in 1881 as one of the results of Lord Airley's Committee, battalions were definitely linked in pairs, lost their old numbers and were known as the 1st and 2nd Battalions of the territorial area from which they were recruited. With the exception of the Cameron Highlanders, each Line Regiment now consisted of 2 Regular Battalions and 2 Militia Battalions, with a common depôt and the Brigade districts, of which there were now 67, became Regimental districts. The Militia thus became a definite part of the Regular Army. As mentioned above when dealing with the question of localisation, the idea behind the two line system was to relieve linked battalion by linked battalion for foreign service, and in 1881 the two line linked battalion system, numbered as such, actually started with 70 battalions at home and 71 overseas.

III.

Unfortunately for the linked battalion system, a war on a big scale came in 1882. Araby Pasha revolted in Egypt and the war necessitated the leaving of an army of occupation in Egypt. Thus the balance of "links" was thrown out of gear and it became necessary to add further battalions to the army. Nevertheless,

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the war proved the value of Cardwell's efforts. It was the first time that Britain had conducted a campagin with a short service army and its reserves. Suakim saw the first employment of an overseas contingent (that of New South Wales). Thus the Egyptian War of 1882 may be taken as marking—

(1) the starting point and the first test of a short service voluntary army.

(2) the beginning of an Imperial Army.

The following year, the Commissariat and Transport Staff became purely military bodies and these were soon followed by the Ordnance Store Department and the Army Pay Department. Thus direct civil control over Army expenditure came to an end.

The Penjdeh affair of 1885 created a war scare. The mobilisation of reserves was again successfully tested and the Colonial Defence Committee which a previous scare of war with Russia in 1878 had produced although it ceased to function before the end of 1879, was reconstituted and has continued to exist and develop ever since.

In 1881 the Annual Army Discipline Act, the successor of the Mutiny Act of the 17th Century, was supplanted by the Annual Army Act which has been re-enacted with amendments year by year up to to-day. Discipline for several years past had been becoming more human and therefore more effective. We have already seen that flogging was practically abolished in 1859 and in 1887 a still further diminution in severity resulted in a decrease in crime. Orders were issued for the more sparing use of Courts Martial and Company Officers were given summary powers.

We have now come to a period prolific in Committees and recommendations and these will be dealt with in summary form:—

1890. *Lord Hartington's Committee* recommended:—

(1) the abolition of the appointment of Commander-in-Chief from the date of the retirement of the Duke of Cambridge in 1895.

(2) the introduction of—

(*a*) a Selection Board.

(*b*) a War Office Council,

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(3) the establishment of a Council of War within the Cabinet to deal with naval and military matter and to decide on questions as between the two services.

(4) that the terms of enlistment should be more elastic and that approved man should be allowed to extend their colour service.

1891. *The Wantage Committee* was convened to deal with the burning question of draft finding and recommended—

(1) that battalions required to find drafts should be permitted to recruit up to an establishment equal to five times the strenght of the anticipated drafts.

(2) that home and foreign stations should have the same establishment.

(3) that terms of enlistment should be more elastic and that approved men should be allowed to extend their colour service, to pass to the reserve more freely and to return to the colours from the reserve.

Lord Halliburton disagreed with the latter recommendation and pointed out that—

(1) the Cardwell system had been maladministered.

(2) that it was a loss of potential trained reserves to allow men to return to the colours from the reserve. The Annual Army Act laid down the number of men which it was legal to keep under arms and every soldier who was allowed to extend his colour service or to return to the colours from the reserve meant one less vacancy for a recruit and therefore fewer reservists in an emergency.

These two committees did not bear immediate fruit, but in the succeeding years effect was given to several of their recommendations :—

(1) 1892. A drafts Committee was formed at the War Office whose duties were—

(*a*) to draw up a roster showing—

(*i*) units available for short tours of foreign duty and minor campaigns.

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(*ii*) units due for long foreign tours.

(*b*) to look ahead and decide when extra recruitment and conversion of service should become operative as regards individual units.

This requires a short explanation. Under the Cardwell ystem, theoretically one battalion of Regiment should be at Home whilst the other was overseas. At the same time it was soon realised that it was necessary to make provisions for minor operations and it was obviously not desirable to let a small war throw the whole draft finding machinery out of gear. Therefore it was decided that units a long way down the foreign service roster should be available for duty in Mediterranean stations (which then, as now, were not considered foreign stations), and for minor expeditions and that units almost due for foreign duty should be kept at Home. Also, it was obvious that it was not sound financially to permit soldiers to proceed on foreign service who within a year or two would complete their colour service. Therefore the drafts Committee had to decide when men of particular units should be permitted to convert their colour to reserve service and thus save the Government the expense of passages to and from foreign stations.

(2) 1895.—The recommendations of the Hartington Committee were carried out in part :—

(*a*) The office of Commander-in-Chief was not abolished owing to strained relations with the U. S. A. over the Venezuelan Boundary question and Lord Wolseley was appointed to succeed the Duke of Cambridge.

(*b*) A War Office Council was inaugurated. The various departments were placed under selected generals who submitted their views to the C.-in-C. for his opinion and were responsible to the Secretary of State for War.

(*c*) A Defence Committee of the Cabinet was formed.

(*d*) A 3 years' system concurrently with the 7 years' system of colour service was introduced, the idea being that, as soon as sufficient men to supply drafts has been enlisted under the 7 years' colour service system,

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men should be enlisted for 3 years' colour service in order to build up a reserve, the total term of enlistment being retained at 12 years.

There were still insufficient reserves for the Regular Army. The Militia as such was not available for overseas duty. It was realised that, in the event of war on a big scale, men would be difficult to find and in 1898 a Royal Warrant legalised the sending of volunteers from the Militia overseas. A Special Service Section of the Militia was formed consisting of—

(1) Individual militiamen who undertook the liability for foreign service in emergency.

(2) Militia Units of whom 500 members in the case of infantry and 250 in the case of artillery had undertaken the liability for foreign service as in 1.

The result was not altogether satisfactory and, as usual, the Britisher being a fine fighter when at war but an ultra pacifist before the outbreak of hostilities, the Boer War of 1899—1902 found us in a state of unpreparedness and emergency measures had to be resorted to.

IV.

The war in South Africa (1899—1902), although it once more proved the value of a short service army with reserves (80,000 reservists were called out, of whom 87 per cent were medically fit), revealed most glaring and dangerous defects in our organisation:—

(1) A Divisional organisation did not exist and had to be improvised in the field.

(2) A Mobilisation scheme, even for brigades, did not exist. Such brigades as were in existence, were broken up and reformed into Fusilier, British, Scotch and Irish Brigades with the result that no one unit knew its next door neighbour with whom it had to go into action and the Staffs were new to their formations.

(3) Every Regular Battalion except one, several Militia Units and special service volunteers enlisted to take the place of regular companies formed into Mounted Infantry were sent to the front with the result that Britain was

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denuded of trained men for home defence. The political atmosphere in Europe became strained and it was essential to find men for home defence, colonial and imperial defence and for drafts for the front. Therefore emergency methods had to be resorted to:—

(*a*) Reserve cavalry regiments were formed from surplus reservists, recruits and odd details.

(*b*) Provisional infantry battalions were formed on a small regular nucleus.

(*c*) Garrison regiments of reservists too old for service were instituted and these plus Militia units relieved regular battalions in the Mediterranean stations and took over such duties as the guarding of prisoners of war.

(4) The Militia decreased in strength, for large numbers of militiamen passed to the line regiments and men preferred to enlist direct into the regulars. Consequently, the Militia reserve which had been formed in 1867 was abolished in 1901.

As a result, the end of the war saw the inception of a number of Committees:—

(1) 1902 (before the cessation of hostilities) the Defence Committee of the Cabinet was reorganised and in it were included the political and professional heads of the army and of the navy and arrangements were made to keep records of its proceedings.

(2) 1903. Lord Elgin's Royal Commission found that "no military system will be satisfactory which does not contain powers of expansion outside the limit of the Regular Forces of the Crown." Thus attention was drawn to Universal Training sponsored by Lord Roberts and the use of the Civil population in the Yeomanry, Volunteers and Militia complementary to the Regular Army.

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(3) 1904. The Norfolk Commission convened to report as to whether the Militia and Volunteers were capable of undertaking home defence by themselves in the event of the whole or part of the Regular Army being on service (as had happened in 1899—1902) found:—

(*a*) that the Militia as then constituted was not capable of taking the field;

(*b*) that the Volunteers were not qualified to take the field against a regular army owing to the unequal education of the officers, the limited training of the men and the defects in organisation and equipment.

The premises on which the Committee had to work were difficult and contradictory. The War Office estimated that 300,000 men were required for home defence whereas the Admiralty opinion was that not more than 5,000 to 10,000 men could land on our shores. Nevertheless as a result of its investigations, the Committee was of opinion that "an adequate and efficient home defence army in the absence of the whole or part of the Regular Forces can be trained and maintained only on the principles of Universal Training."

(4) 1903-04. The Esher Commission examined the organisation of the headquarters of the army and of the administration of the army as a whole and as a result of its deliberations:—

(*a*) in Army Council of 7 members (4 military and 3 civilian) was inaugurated.

(*b*) The appointment of Commander-in-Chief was abolished.

More important still were its other recommendations which, although based on the experience of the S. African War, were not immediately adopted:—

(1) that a General Staff should be formed whose primary duty should be the preparation of the army for war.

(2) that administrative routine should be decentralised and separated from training so that commanders should not be fettered by routine and office work and should thus be given more time to devote to training for war.

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(3) that the Defence Committee of the Cabinet should be made more efficient by the institution of machinery for the collection and collation of information and professional advice for the use of that body so that preparations for national policy and for the conduct of war could be made a head of events.

These recommendations were all to the good and, as we shall see, ultimately became operative, but 1903-04 saw a retrograde step—Mr. Broderick (afterwards Lord Middleton) as Secretary of State for War brought in an Army Corps organisation for Regulars, Militia, Yeomanry and Volunteers. These were divided into 6 corps—on paper—irrespective of the fact that there were neither staffs nor transport, nor administrative services, nor ammunition columns for them. In fact, only the Aldershot Army Corps could have been mobilised and then nothing would be left for the other 5 corps! Luckily for Britain, the system was scrapped in 1905. The Aldershot A. C. was retained as the nucleus of a striking force and the remainder of the army organised into 6 divisions of 2 brigades each, and 4 cavalry brigades.

V.

In 1905, Mr. Haldane became Secretary of State for War and the following year the secret German Ship building programme became known to the British Government. The Germans with the aid of their Austrian ally, determined to make a bid for supremacy at sea which threatened the safety of the British Empire. Her building programme showed a huge increase in the number of bottoms and pointed to a rapidity of construction which previously would have been considered impossible. It behoved Great Britain to wake up, examine the findings of the various Commissions and Committees and to set her military machine in order.

In 1906, the formation of the General Staff was completed with its head at the War Office and branches in the Commands, and the same year, Mr. Haldane laid before Parliament, in the form of a Memorandum, the deplorable state of the armed forces of the Crown:—

(1) The Regular Army contained several services manned by trained soldiers whose functions in war could be performed by civilians and partially trained personnel.

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(2) The Regular Army, Volunteers, Yeomanry and Militia had been formed haphazard, their functions were not sufficiently defined or co-ordinated and no steps had been taken to regulate the proportion of services and arms in the armed land forces of the Crown.

(3) The General Staff was of opinion that to maintain an army in the field even for a war of moderate duration, 50,000 Regulars, 70,000 Regular Reservists and 30,000 Militia constituted the minimum army to be maintained in peace and that these should be organised into 4 Cavalry Bdes. and 6 Infantry Divns. of 3 Bdes. each plus L. of C. troops.

(4) That there was not sufficient relationship between the civil population and the Army and that this should be remedied by—

(*a*) making the territorialisation of Regiments even more effective.

(*b*) encouraging Volunteers and giving them real war training and a uniform organisation.

(5) That Britain should possess an Expeditionary Force ready to take the field immediately, supported and expanded if necessary by a trained force of civilians.

The following year, Mr. Haldane presented a similar and more forcible Memorandum to Parliament and announced preparatory to the introduction of the Territorial and Reserve Forces Act that it had been decided—

(1) to organise the army in 2 lines—

(*a*) A Regular Expeditionary Force capable of immediate mobilisation.

(*b*) A Territorial of Home Defence Force which should be mobilised on the outbreak of war for 6 months training to fit them to take the field at home.

(2) that the Militia should be abolished and its place taken by the Special Reserve.

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The Territorial and Reserve Forces Act (1909) gave effect to the above and provided—

(1) that on the 31st March 1909 the Volunteers should cease to exist and their place taken by the Territorial Force organised into Divisions on the same lines as the Regular Army, the Yeomanry continuing to exist as its cavalry. That the administration of the T. F. should be under County Associations and its training under the Regular Commands, the T. F. Bn. Staffs being Regular soldiers.

(2) that the Militia be reconstituted as the Special Reserve in two categories:—

(*a*) 74 Bns. (1 as an integral part of each Line Regiment, 2 Bns.) whose duties should be—

(*i*) to take over surplus reservists and unfits from the regular Bns. on mobilisation.

(*ii*) to train and supply reservists for the Regular in the field.

(*b*) 27 Extra Reserve Bns. whose functions should be—

(*i*) to reinforce the army in the field when necessary.

(*ii*) to be available for home defence.

Immediately a dearth of officers, particularly for the Special Reserve and the T. F. became apparent. A Committee was convened under the presidentship of Sir E. Ward and as a result of its findings the Officers Training Corps were formed—an organisation which did more than most people realised, to check the German advance in 1914 and in ultimately ensuring the victory of the Allies. Under the O. T. C. system, Junior Divisions were formed at the public schools and Senior Division at the Universities. Cadets of the O. T. C.s undertook no liabilities, but it was hoped that sufficient cadets on the termination of their University careers and their O. T. C. service would be candidates for commissions in the Special Reserve and the T. F.—a hope which was more than realised before and during 1914 and the ensuing years. Throughout the war O. T. C.s continued to carry on their work and to them in no small measure is due the fact

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that, although officer casualties were high, there was a continuous stream of young, trained, public school and university men into the ranks of British Officers.

In 1909 the German ship-building programme which had been known in 1906 in official circles was made public. An Imperial Conference was summoned and, as a result, all the Dominions set about organising their forces on the British Divisional system so that, provided that the various Dominion Governments agreed to join in any particular war, there would be an Imperial Army all parts of which had been trained on the same text-books and were organised on the same principles. Several Dominions went ahead of the mother country and instituted various degrees of liability for service and universal training, but this belongs to the realm of Imperial Organisation rather than to that of the History of the British Army.

At the same time that the German ship-building programme was made public, steps were taken to improve organisation, training and armament:—

(1) the highest formations were reorganised so as to form integral parts of an Expeditionary Force.

(2) peace training of the higher formations was so adjusted that the staffs which trained the troops in peace would direct them in war.

(3) Musketry training was improved with the result that in 1914, the Germans thought that our riflemen were Bns. of M. Gs.

(4) The R. F. A. was organised into 27 Bdes.—

18 for the 6 Divns. of the Expeditionary Force.
6 as training Bdes.
3 unallotted.

At this time the R. A. was short of reservists. Therefore the form of enlistment for gunners was reduced to 3 years with the colours and 9 with the Reserve.

(5) Six Cavalry Depôts were formed to train recruits and act during war in the same way as the special Reserve Bns. did for the infantry, and the boarding out system was adopted so as to ensure a reserve of trained horses.

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(6) To form a reserve of trained drivers, the term of enlistment for M. T. A. S. C. was reduced to 1 year with the colours and 11 with the Reserve.

(7) Steps were taken to remedy the deficiency in R. A. M. C. Officers and Reservists.

(8) The Reserve of Officers was reorganised so as to provide a larger reserve of junior officers on mobilisation.

(9) The general Staff as a result of the Imperial Conference of 1909 was placed under the C. I. G. S. at the War Office and a branch of the G. S. was established in every Dominion.

This may be taken as the state of affairs on the outbreak of war in 1914. Subsequent developments are well known to serving officers.

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1815—SOME REASONS FOR THE FRENCH FAILURE.

By I. D. Elliott, Esq., I.C.S.

Many students of the Waterloo campaign must have wondered at the failures of the higher command of the French Army of the North. The extent of Napoleon's own responsibility for his defeat is still a matter of controversy, but all authorities are agreed that he was badly served by his generals. There was careless work in the staff, very far from exact observance of the orders of movement, a marked lack of initiative, bad tactical handling of the troops in action. The following notes on the French generals of 1815 will help students to realise how the French army was staffed and will perhaps give some clues as to one cause of its failures. In the last years of the European war the wastage of general officers had been very heavy, but there were in France in 1815 170 generals of the staff, infantry and cavalry, who had reached the rank of general of division before the Emperor's first abdication, and who were still fit to take the field. With half a dozen exceptions, including Napoleon's brother Jerome and two of the Emperor's aides-de-camp, all these generals had been on active service since 1792. The oldest, Lecourbe, was only 56 and only eleven generals were more than 50. With comparative youth and great war experience they formed an unequalled cadre from which to select a staff for the small picked force which Napoleon could put into the field. As he took only 64 generals of division including the Marshals to Belgium in 1815, there was ample scope for choosing the best men. Were his generals then wrongly selected? Did they fail to represent the best military talent of France? Were they holding commands unsuited to their special qualifications and experience?

The chief test of selection to a command in the Imperial army had always been, and in 1815 this was more than ever likely to be the case, the possession of sound political views. The

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terrorists of 1793 avowed that they preferred their generals to be ignorant republicans rather than soldiers who thought more of their profession than their politics. Napoleon followed their example; as a qualification for command he preferred personal devotion to military capacity. The second passport to command was service under the eyes of the Emperor, to be an officer of the Guards or to have gained the Emperor's approval in one of the Emperor's battles. The third requisite for selection was to have the personal recommendation of one of the Emperor's principal adherents. These statements may appear exaggerated, but a prolonged study of the generals of the Empire has convinced me that an officer who was not a devoted Bonapartist, or who had served mainly in some army which Napoleon had not himself personally directed, or whose claims were not pressed by one of the Emperor's chief lieutenants had little chance of a good command. These were the principles of selection which had led to disaster in Spain and Germany in 1813; they dominated the choice of the higher command in the Army of the North, and led to disaster again in 1815.

The obvious field for selection in 1815 lay in the cadres which had fought heroically in France in 1814, and which represented the remnants of the victorious armies of the Empire. But seven of the nine generals who had held corps commands in the north were politically impossible; Augereau, Marmont, Victor and Maison had emigrated, Macdonald and Oudinot retired, Mortier was diplomatically ill. They may have been tired of war, they were certainly tired of the Emperor; but none had been so tired as Ney, whom politics now brought back to the field. Everyone knows the case of Ney; there was greatness in him, marred by a strange, morose, unbalanced temper. What was there in his record to win him his command in 1815? His deplorable conduct in the Spanish war had been redeemed by his indomitable resistance in the rearguard in Russia. But 1815 was not to be a campaign of rearguards. Ney had been rewarded for Russia by being given the strongest corps of the new army of 1813; under his handling in the field its numbers were reduced from 47,244 on 25th April to 23,199 on 1st June 1813. After the armistice he was given a wing command, in which he failed conspicuously. He

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was reduced in 1814 to a small fighting command, and led the final opposition to the Emperor. He owed his command in June 1815 to his glaring desertion of the King. Napoleon was as obstinate as were his successors the Bourbons in repeating his mistakes and in June 1815 he again gave Ney a wing command in which he renewed with singular exactness his failures of 1813. The Emperor entrusted a corps to one other leader of the army which fought in France in 1814. This was Maurice Gerard, a good officer but quite inexperienced in such a command. He owed his position to the personal influence of Davout, who had given him his division in 1812, and to his good fortune in coming under Napoleon's eye at Montereau, when he was abruptly substituted for Victor in command of a corps which was no stronger than an ordinary division. The fortunes of the leaders were reflected in the employment of the generals of division who had been subordinate to them in 1814. Three of Ney's four generals were again employed, two of them being officers in the Guards. The third, Lefol had served with Ney in 1805-6 as well as in 1814. Ney's old Lieutenant, Marcognet, who had been in Italy in 1813-14, was also given a command. Gerard's Lieutenants were re-employed Duhesme who had commanded divisions and corps since 1794, but who after some years of well deserved disgrace had only been recalled to the field for a few months in 1814, was given a command in the Guards, and fell at Waterloo. Bourmont, for many years a royalist rebel, had the convenient friendship not only of Gerard, but also of the Emperor's aide-de-camp, Flahault; he had been promoted in 1814, had never led a division in the field and knew little of regular infantry. Personal influence and an exploit under the Emperor's observation in 1814 secured him an infantry division in Gerard's corps, whence he deserted to the enemy at the beginning of the campaign.

The disgrace of the seven other corps leaders extended to their subordinates; only two out of their 23 infantry generals of division, the surviving flower of the cadres of the Grande Armee, were given field commands, and these two were officers of the Guards, personally devoted to the Emperor. Men of the highest reputation and prolonged experience, like Compans, Molitor, Curial and Claparede were sent to essentially

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unimportant commands in the interior because their later chiefs were out of favour or their political enthusiasm for the Emperor was not sufficiently pronounced.

The other corps commands in 1815 went to two generals who had been taken prisoner in Germany in 1813, Vandamme and Lobau, and to two of Soult's corps commanders in the Spanish army, Reille and D'Erlon, Soult himself being chief of the staff, Lobau and Reille were aides-de-camp of the Emperor. Their political fidelity could not be questioned and immediately after Napoleon's return from Elba they were placed in charge of the concentration of troops. Lobau was given the command in Paris for which he was eminently fitted by his reputation for training infantry. It would have been a sound measure to leave him in Paris in the command he was destined to hold with such success under King Louis Philippe, and to release for service in the field the far greater talents of Marshal Davout. Of the special fitness of Reille and Lobau for a corps command Napoleon could really know but little, although in spite of his failures with Bertrand and Lauriston in 1813, and with Junot and Marmont before them he remained obstinate in his belief that his aides-de-camp must have learnt from him the full art of war. Lobau had seldom commanded a division and held a corps command for only a few weeks before he was taken prisoner. He was a good fighting man and a skilled inspector of infantry training. Two of his friends who had been captured with him in Dresden, Teste and Bertuezene, were given divisional commands. Reille had long been isolated in Spain. A man of some talent but of no great force of character he wisely brought with him to the army of the North his able lieutenant Foy whose talents Napoleon had ignored for so many years. Force of character was not lacking in Vandamme; his long career of indiscipline, negligence, and pillage had ended in disaster at Kulm in 1813, but in the Imperial system military disaster was a far less serious demerit than political opposition, and Vandamme was the most enthusiastic Bonapartist leader in French Flanders. I am far from saying that Gerard, Lobau, Vandamme and Reille were not fine soldiers; but two of them had little experience of the duties now assigned to them; it does not appear to have been for their military

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abilities that they were selected; and there were generals available like Suchet, Clauzel, Grenier and Decaen who had more ability, more experience and more reputation.

Both D'Erlon and Soult owed their commands to their political action. They deserve some special mention for they are particularly representative of the lack of morals which characterised the imperial army. Both were members of a very influential gang of generals from the Army of the Rhine, who had had no early connection with Napoleon, but were brought over to him in 1799 by that shrewd Alsatian Lefèbvre and thereafter secured great rewards for their devotion, while being loyal in their friendships they spent much of their time in obtaining honours and riches for one another. Drouet D'Erlon, aide-de-camp to Lefèbvre in 1794 and afterwards his chief of staff, had a good record in command of a division, but his corps command in Spain from 1810 to 1814 brought nothing to his credit. The more closely his conduct is examined the more plainly does the fact emerge that most of the misfortunes of the French in Spain were connected with some action or inaction on the part of D'Erlon. Of the details of his conduct Napoleon knew little; we are indeed ignorant to-day, for in later years Soult, as Minister of War, and D'Erlon, whom Soult made a Marshal of France, appear to have carefully expurgated the records in the Ministry. Enough is known of his career to make his selection for a command in Belgium astonishing from the military point of view. But in his favour he had the Bonapartist rising at Lille in March 1815. Like Vandamme he was on the spot when troops were concentrated on the Belgian frontier, and he was given his command regardless of his military record.

Historical truth has slowly undermined Soult's once great reputation as a soldier, though his administrative capacity is unquestioned. He would have been most useful to the Emperor as Minister of War, a position he was destined to hold for many years under King Louis Philippe. But he had too recently held that post, to the great offence of the Bonapartists, under the royalist regimé which he had now, like Ney, flagrantly deserted; and he could not be trusted at Paris. His personal influence was small and none of his subordinate generals of division except his

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brother, a mediocre cavalry general, were called to the Army of the North. It is noteworthy that in 1815 Soult retained very useful connections with the ultra-royaltists; in particular his former chief of staff and confidant Ricard had emigrated with the King. To appoint an officer to be chief of staff because if he were not at G. H. Q. he might be a traitor is not a military proceeding. But from some points of view Soult's appointment was not unreasonable. He had been chief of staff to the armies in Spain, and had often been regarded as Berthier's probable successor. It was however a shock to the moral of the army and it was not necessary; there were many eminent staff officers available, notably Bertrand, and Belliard who was wasted in a political post at Metz. In passing I would suggest that too much weight is sometimes given to the failure of the French general staff in 1815. The staff had changed its chief, but its personnel was as strong and experienced as in the preceding campaigns: Monthion, the deputy chief of staff, had been for years Berthier's chief lieutenant; and the Emperor had on his personal staff no fewer than seven generals of division headed by Bertrand. Various acts of negligence are attributed to Soult, but such errors were common in Berthier's regimé; and the staff work of the Empire was surprisingly careless. Soult's appointment, however, was not one which should have been made in an honourable national effort to face the emergency.

The selection of commanders for the infantry divisions was as remarkable as that of the principal commanders. In 1814 there were four main organised armies in the field, the armies of France, Spain, Catalonia and Italy. It might fairly be assumed that they were led by the best of the generals of division who were left to the Empire. Yet very few of these generals reappeared in Belgium in 1815.

Apart from the Guard, in which seven of Napoleon's most devoted personal supporters resumed their commands, there were 17 divisions of infantry in the five corps. Only five of these divisions went to generals from the four armies of 1814. From the army of France came Ney's Lieutenant Lefol and Gerard's friend Bourmont, the latter with no experience of divisional

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command. Habert was the only representative of Catalonia, Reille's friend Foy, the only general from Spain, Ney's friend Marcognet the only general from Italy.

All the other generals were posted to territorial or political commands and there was thus a great waste of talent for the field. I have attempted to explain the neglect of the army which fought the campaign of France in 1814. Its leaders were politically discredited, and their lieutenants had too little personal support. To the armies of Italy, Catalonia and Spain applied the third principle which, I have suggested, influenced the choice to commands in the Imperial regime.

For many years these armies had been out of Napoleon's sight and some of their most distinguished leaders were hardly known to him. Marshal Suchet for example had fought seven campaigns without meeting the Emperor: in their first interview in 1815 he was greeted with the remark, "You have grown a great deal, Marshal, since we last saw each other." Suchet had indeed grown to be a duke and a marshal, but he was not one of the essential figures of the Imperial circle; he could be left therefore to form a skeleton defence force in the Alps instead of being used at the point of crisis. Suchet's brilliant Lieutenants Harispe and Lamarque, and Clauzel, a far abler corps leader than Reille and D'Erlon, who had been his colleagues in Spain, were also not utilised for real military purposes. Their military careers had too few points of contact with the Emperor's they were relegated to territorial defence, political repression and Guerilla warfare. Two other corps commanders, Decaen and Grenier, who were as representative of the sounder elements of the old republican army of the Rhine, as were D'Erlon and Vandamme of its less estimable side, were equally neglected. Both had been friends of Moreau, and the friends of Moreau or the friends of Hoche, like Mermet who commanded the cavalry in Italy, had singularly little prominence in the Imperial armies. Decaen was as able a leader as any general in the field, and Grenier who had commanded a corps since 1799 was one of the most respected officers of the army, but neither was an ardent Bonapartist and neither had fought directly under the Emperor's orders. Lecourbe, who shared Grenier's republican opinions, had been

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kept in retirement during the Empire in spite of his high reputation as a soldier: but his support of Ney in the political events of March 1815 gave him a corps in the scheme for the defence of the Rhine; the other Rhine corps went to Rapp who was the Emperor's aide-de-corp

When the talents of the eminent corps commanders and their lieutenants in the four armies of 1814 were so largely ignored it is not surprising that some far from distinguished or suitable selections had to be made for the seventeen infantry divisions. Of D'Erlon's four generals of division, Allix, Donzelot, Marcognet and Durutte, the two former were strange choices. Allix had been the friend of King Jerome in Westphallia, a clever but eccentric officer of artillery who knew nothing about infantry but who had been prominent in the Bonapartist rising in March. He fell ill on the eve of the campaign and his division was actually commanded at Waterloo by Quiot, a general of brigade who had been captured with Vandamme at Kulm.

Donzelot had long been general of division, but had never led a division in the field. After a distinguished but not over scrupulous career in the staff he had for five years command at Corfu. He was emphatically a "soldier of fortune," a nervous irritable man far from suited to the task of hard fighting leadership which fell to him at Waterloo.

Marcognet had for eight years commanded a brigade under Ney in the Grande Armee, but as a general of division he was undistinguished.

Durutte was the best of the four generals, and appears to have led his division skilfully at Waterloo. He had much experience but had been rather neglected in the greater days of the Empire: he had won the Emperor's approval by his defence of Metzin 1814.

In Foy Reille had a lieutenant of the highest merit. Gerard also was a general of division of great experience and ability, but his career had been chequered; his carelessness had involved him in disaster in Spain and he had been disgraced; he had been restored in 1813 only again to meet with disaster in Germany.

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Bachelu was a capable engineer officer who had, however, taken part in none of the great battles of the Empire and had only commanded a division during the defence of Dantzie. Reille's fourth division was nominally led by the Emperor's brother Jerome, who was absolutely unacquainted with his duties; and though Jerome was helped by Guilleminot, the latter's successful career had been almost entirely confined to the staff; the mismanagement of this division in the attack on Hougoumont farm is not surprising.

It was these two corps which had the heaviest fighting at Waterloo. Neither corps was brilliantly led, and the careers of the generals who led them gave no reason for expecting that they would be.

Lobau's corps had two generals of division who had just been promoted by the Bourbons and had never led divisions in the field, a remarkable fact considering the number of experienced and still young generals of division who were available.

These two generals were the former staff officer Simmer, and Jeannin, whose career in command of a brigade had been undistinguished. Both were being rewarded for their recent political action.

The third division in this corps was detached during Waterloo with Grouchy: it was commanded by Teste, Lobau's friend, a good officer who led the division very well.

The two corps which marched off with Grouchy on the 17th June were rather more effectively staffed. In Habert Vandamme had a general whose reputation was equal to that of any general of division in the most glorious days of the Empire.

Berthezene and Lefol who commanded his other divisions had not quite so much experience, but fully deserved their commands. This was a good corps.

Gerard's lieutenants were capable officers but less distinguished. Vichery and Pechaux had been with Davout at Hamburg, and like Gerard himself owed their commands to Davout's patronage. Neither had very much experience of field

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operation on the grand scale. When Bourmont deserted, his place in command of Gerard's third division was taken by Hulot, a general of brigade who for most of his career had been Soult's aide-de-camp.

Though there were good officers employed it is obvious that in general the appointments to the infantry commands in the army of the North did not represent an appeal to the best military talent in France. Six of the seventeen divisions were in the hands of generals who had never led a division in the field. Six of the other generals of division had only reached this rank in 1813 and, with the exception of Lefol, had soon found their experience curtailed by the fact that they were shut up in the German fortresses. Only Durutte, Gerard, Foy, Habert and Marcognet represented the fuller experience of the greater armies of the Empire.

It is not necessary to say much about the generals of cavalry: the field for choice was more limited, and nearly all the generals of division were men of high reputation, with great services to their credit in the campaign of France. The cavalry corps commanders were excellent, Kellermann for the cuirassiers, Milhaud for the dragoons, Pajol and Exelmans for the light cavalry, the two latter fully deserving their commands though they owed them to their political services. But Grouchy their chief had been lucky to reach in 1814 the supreme command of the cavalry. A cavalry officer under Louis XVI he had served in the staff and infantry until 1806, and his subsequent career in the cavalry had not been very remarkable. The defection of Murat, the deaths of Montbrun, Bessieres and Nansouty, the failure of Sebastiani and the disgrace of Kellermann had given him his chance at the end of 1813, and the exploits of the cavalry in the campaign of France had confirmed him in his post. As an anti-Royalist aristocrat Grouchy was in 1815 of real political value to Napoleon, and he had just won the Marshal's baton by his politics. It was natural to maintain him in the command. The alternative was Kellermann, who had presumed too much on his services in the great charge which had won the battle of Marengo, and was not liked by Napoleon. He had for years served away from the Emperor, had been disgraced and only

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grudgingly forgiven in 1813, and had used his disfavour with Napoleon to obtain a command from the Bourbons. To give the command to the mediocre officer as a reward for political services, and to employ the abler but less subservient general as a subordinate was the normal system of the Empire. It was a curious reversal of their experience that Grouchy, the old infantry general, who had ever since 1807 served in the cavalry should have been conducting infantry on June 18th, 1815, while Ney, the old light cavalry officer, who ever since 1799 had commanded infantry was leading heavy cavalry at Waterloo. But in putting Grouchy in charge of a wing after the battle of Ligny Napoleon was only following his usual practice with Murat and Bessieres, though neither in 1805, 1807, 1812 or 1813 had the commander of his cavalry reserve shown any capacity for directing infantry. Had Grouchy rejoined the main army at Waterloo he would doubtless have at once resumed the direction of the cavalry on the field of battle.

This list of political selections and inappropriate commands would not be complete without a reference to the case of Marshal Davout, though that case is well-known. The most successful of the Marshals in independent command in the field he was compelled much against his will to fill the post of Minister of War. This appointment was an extraordinary waste of military talent. When the Emperor set out on his march to Austerlitz in 1805 he had not left his best generals behind him to direct the War Office, to maintain order in Paris, to hold Holland against an English raid or to watch the Prussians in Hanover. But in 1815 he left Davout in Paris and posted Suchet to watch the Alps and Clauzel and Decaen to face the Pyrenees. There was no need to leave Davout: Napoleon had good officers for the Ministry of War, Carnot himself, or Vignolle who had been a success in the Italian Ministry of War. And in Lobau he had a lieutenant on whose fidelity in Paris he could have counted as absolutely as on that of Junot who had commanded Paris in 1805. The decision may have been influenced by the fact that in the last years of the war, from 1812 to 1814, Davout had been so much detached from the Emperor, and had therefore somewhat lost his position as his chief lieutenant. Personal habits of this kind played an important part in Napoleon's life;

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he had become used to maintaining Davout in a key point like Hamburg, rather than to employing him in the striking force in the field. That by this he was wasting a man of independent talent, was not an idea which would have much weight with Napoleon. In 1813 he had used Ney and Macdonald to fight his battles, Davout and Gouvion St. Cyr to defend his fortresses. He had learned no lesson from the consequent disaster.

Such was the composition of the staff of the Army of the North. It was a staff saturated with politics and sundered by divergent lines of personal intrigue. For this, for the unsuitable selections, for the neglect of so many able and patriotic men the responsibility must rest on Napoleon. When he had obtained power in 1799 he had available for his service an unequalled cadre of officers. He gradually corrupted and wasted the wonderful material which France had given him. He preferred personal devotion to character and capacity, and the rewards for which he taught his adherents to look were plunder and titles. He could not tolerate those who saw in the army the army of France rather than the soldiers of the Emperor. He shelved so much that was honourable and independent. And he found the nemesis of supreme genius in his belief that it did not really matter who were his lieutenants, provided that they took their orders from him. He doomed his army and himself to catastrophe because he ignored human nature and had forgotten how to choose men.

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THE BRITISH SOLDIER AND HIS LIBRARY.

By Major F. K. Hardy, D.S.O., Army Educational Corps.

The importance of giving the British soldier healthy recreation is admitted by all, and, thanks to the Army Sports Central Board, considerable facilities for physical recreation exist in every military centre at the present time. In fact, in this respect the Army is in advance of the Country at large. But in the case of mental recreation, which is equally important for efficiency, the situation unfortunately is reversed.

A glance at the annual report of any public library will convince the most sceptical that the working classes, in England, are fond of reading, and have a catholic taste in books. The British soldier comes, mainly, from this very class, and, if given the opportunity, would spend much of his spare time in reading. The avidity with which the men, during the War, read old tattered magazines and even scraps of newspapers will be remembered, and will help to prove that books are welcomed as a means of passing the hours of idleness, which, particularly in India during the hot weather, are the unavoidable lot of the British soldier. These periods of idleness are bound, unless steps are taken, to produce lethargy of mind, boredom, and discontent. This state of affairs can be prevented by the provision of healthy mental recreation, which should be catered for like any other pastime, in the form of libraries and reading rooms, stocked with readable books and papers.

Before he enlists a man can make use of the local public library, but, when once within the barrack gates, he finds that, except in rare instances, he is cut off from this source of recreation and enjoyment, and is, indeed, fortunate to have a library at his disposal at all. In the larger military stations sufficient libraries exist, which, when well and sensibly managed, fulfil their object and provide the soldier with plenty of healthy amusement, but when these are ill-managed, and in the smaller garrisons and

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detachments, his source of supply is curtailed, often unnecessarily, and, sometimes, entirely. This is unfortunate because reading, by keeping the mind active and by encouraging a man to think, makes him a more valuable soldier; it is unfair, because the soldier is placed, through no fault of his own, at a disadvantage to his civilian brother.

The majority of units have libraries and reading rooms of their own, and in addition in the larger garrisons libraries, supported out of public funds, are available for the men. If these are not used—and it is a regrettable fact that many are seldom entered by the very men for whom they are kept up—it is certain that something is radically wrong with the library or its management. On enquiry it is probable that the library's unpopularity is due to some easily preventable cause, the most common failing is the need for complete overhaul. So many of these libraries will be found to be overloaded with tomes of a religious nature, antiquated books of travel, and indifferent novels in a moth-eaten and derelict state, which it would be a penance for anyone to read. This literary lumber should be scrapped ruthlessly, and if, as is often the case, the rules demand, for checking purposes, some definite number of books, irrespective of their merit, those rules should be amended. Other factors which deter men from using these libraries are that the hours of opening are unsuitable, and that the rooms are ill-lit during the evening. A further cause, frequently, is the librarian who, having been chosen at haphazard, looks upon the work as a fatigue, and, to save himself trouble, throws every possible obstacle he can in the way of men wishing to take out books. The loss of a book by a reader is too often looked upon as a heinous offence, for which the unlucky man has to pay the original value of the book, no matter how old and delapidated it may have been.

These faults may appear insignificant, but they are sufficient to mar the utility of any library, and would not be allowed for a moment in the most backward public library in England.

In starting or reorganizing a library for the use of British soldiers it must be remembered that the main object of such libraries

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is to provide recreation, and consequently they should be stocked with the books which the men *want* to read, and not with those which other people think they should read. With this end in view it is essential that the management of the library should be mainly in the hands of N.-C. O.'s and men. This necessitates the formation on a committee, whose control should be active, and not nominal. To this committee should be left the selection and purchase of books, a power to weed out worthless books, and a voice in the choice of librarian. Another important consideration is that the room, used as a library, should be made as comfortable and attractive as possible, and be really well-lit at night.

When making purchases of books for these libraries the second-hand lists, issued by the big commercial lending libraries in England, should be consulted. Books less than twelve months old, by the most popular writers of to-day, can be bought for a third of the published price, from this source. On no account should the offer of firms, who advertise that they will supply so many unnamed novels for so much, be accepted. It is merely the means of ridding the shop of unsaleable stuff.

I do not intend to give a list of the books which should be included in these libraries, as the best guide is given by the demands on the public and commercial lending libraries at Home, but I would like to see biographies of great men, particularly those who came to the front unaided by influence, placed on the shelves.

Reading rooms are another aid to the rational recreation of the men, and many of these might well be set in order. I have seen one of these, in which no paper was less than six months old, and another in which, although it was winter, there were no lamps. To achieve their object these rooms must be made comfortable. The more like club rooms they are, the better. In addition to the usual daily and weekly papers, a good selection of magazines, including some of the better class ones, should be provided. Even the most expensive magazine can be bought second-hand, from Mudie's or other big lending libraries, at a considerably reduced rate, when a month old. Most soldiers retain during their service an interest in their pre-enlistment

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life, and for this reason a selection of trade and technical journals are needed. The choice of these will depend largely on the districts from which most of the men come, and can well be left to the judgment of the men themselves.

The provision and upkeep of a good library entails trouble and expense, but it adds greatly to the contentment of the men, and a contented soldier is a useful soldier.

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A GLIMPSE AT THE I. A. S. C., B. C.

By Major C. G. Lloyd, C.I.E., M.C.

A sweltering afternoon in the Punjab exactly twenty-two and a half centuries ago. The squalid little river village of Puri lay sunk in slumber. Apart from a couple of paria dogs that snarled over a heap of garbage, the landscape showed no sign of life.

Suddenly the heavy dust-laden air was rent by a strident trumpet-call from the far bank of the river. In an instant the village was astir, each man tremulously questioning his neighbour. That horrid clangour could never have issued from mortal throat, whether of man or animal; and the word went around that it was one of their own brazen gods come to devour the country. Again the trumpet pealed out and the bank opposite was seen to bristle with a forest of lances borne by strange white-skinned horseman in bronze armour and wearing high crested helmets. For a few seconds the line stood motionless fronting the river, then, as one man, plunged down the steep slope and with loud shouts spurred their horses into the swirling current. Three minutes later they were in the village and the wretched inhabitants, too terror-stricken even to flee, gazed with superstitious dread on these beings from another world.

It would indeed be difficult to find a more striking contrast than that presented by the two races—European and Asiatic, invader and invaded. On the one side a huddle of dark-skinned savages, stunted and degenerate, clothes in dingy rags and crouching down to the dust in abject prostration. On the other, a formed body of war-hardened athletes clear of eye, lusty of limb, and glorious of apparel, sitting their horses with an air of truculent devil-may-care swagger that became them mightily. It must be admitted that they had some excuse for entertaining a good conceit of themselves. Had they not for well-nigh a dozen

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crowded years ridden from one amazing victory to another, until, in the phrase attributed to their Chief, there were "no more worlds to conquer?"

For these soldiers belonged to the army of Alexander the Great, and in that army their particular corps, The Royal Horse Guards, recruited exclusively from noble Macedonian families, held the pride of place.

On the occasion of which we write, they were acting as escort to a Baggage and Supply Train bound for Macedonian Headquarters, then engaged in operations against a walled city belonging to a tribe known as the Malli. The commander of the Train, Euphorion by name, was himself an officer of the Horse Guards, temporarily seconded on special duty. He shortly made his appearance and entered into conversation with his colleague of the escort. As a result of their colloquy the latter officer, dropping a few connecting files, moved off at a sharp trot towards some rising ground that commanded the village.

The commander of the Train looked hot and bothered. A giant of a man, his plethoric habit was ill-suited to a Punjab June. It was, incidentally, this excessive bulk that had indirectly procured him his present billet. For his Brigade Commander, finding him unduly expensive to maintain in horseflesh, had warmly recommended him for extra-regimental employ. Now Euphorion, though an indifferent horseman, was an acknowledged expert and enthusiast on all matters connected with eating and drinking. Indeed the story ran that on one occasion when transport was short and camp-followers rigorously restricted, he had elected to leave his mistress behind rather than part with his Lydian pastry cook. It was therefore very properly decided that the obvious place for him was the Commissariat Branch.

He had thus blossomed into a sort of glorified A.D.S. & T., L. of C. with a side-line in Engineer Field Park and Ordnance Stores. On the whole the job suited him admirably. He was almost entirely his own master being quite unhampered by any of the vexatious restrictions and regulations that harrass his present-day successor. He was never worried by accounts, for the simple reason that he kept none—the modern practice of paying or supplies not having yet come into vogue.

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But to-day, as already intimated, his normal state of contentment with his lot had been sorely ruffled. Everything seemed to have gone wrong with him on this particular expedition. To start with, his favourite stallion Sabaces (named after his late master Satrap of Egypt) had lamed himself so hopelessly that he had had to be left behind. Secondly, only three days previously a detachment of Scythian bowmen employed by him at herdsmen and camp-guards, had deserted, taking with them the bulk of his slaughter cattle. And now, that useless lout of a Lydian slave-boy had broken the very last two jars of his treasured Saman wine, and on the top of that had the incredible impudence to suggest that he—Euphorion should drink the vile swipes of the country, brewed from decayed barley and the refuse of mollases! That settled it. He would submit an application for a transfer to the Home Establishment on compassionate grounds, and after that—catch him leaving Greece again!

His reverie was interrupted by the arrival of a tall cadaverous man wearing a long sage-green caftan and a high felt cap not unlike the modern fez. This was Maharbaal, Phœnician extrader and slave dealer, and Euphorion's right hand man. A born adventurer and vagrant, if ever there was one, he had spent twenty-five of his forty-odd years, roaming through the high-ways and by-ways of Asia, his beat extending from the coasts of Syria as far as Pataliputra on the Ganges. Endowed with an observant eye and a retentive memory, it will readily be understood that he was invaluable to the Macedonian Army in his rôle of interpreter, contractor and political adviser.

Euphorion eyed him sulkily. "What's happened now?" he grumbled. "More trouble, I suppose?"

"Yes," replied the other smoothly. "We have had trouble, certainly. You remember that narrow ledge skirting the ravine about ten miles back?"

"Yes, yes, get on man, what about it?"

"Well, the edge gave way and the four elephants with the battering-ram fell down into the ravine. A regular mess-up, I'm afraid."

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Euphorion's ruddy face grew pale. If the Battering-Ram—The Destroyer of Cities—were lost, he was ruined. It was the self-same engine that had first shattered the great wall of Tyre, and been afterwards solemnly dedicated by Alexander himself in the temple of Melkarth. The troops looked on it as a mascot and never yet had it failed them.

"You don't mean to say"—Euphorion stuttered in his nervousness—"that—that the—."

"One of the elephants is dead;" replied the Phœnician, methodically ticking off the casualties on his fingers. "Dido, you remember her. The big bull elephant broke a foreleg—."

"Not poor old Physkon?"

"Yes, poor old Physkon. It was heart-rending to see him. He kept showing us his leg as though asking us to mend it. All of the Indian drivers are knocked out, and two of them are not expected to recover."

"The Ram?"

"No the Ram is all right. You don't think a little drop of fifty feet or so would hurt her. Did I not personally select the finest cedar that ever grew in the Forests of Lebanon? Did I not superintend the hewing and shaping on the sea-shore at Byblus? Did I not journey specially to Halicarnassus to arrange the casting of the great bronze head after a fashion invented by myself? Did—."

Euphorion clicked his tongue impatiently. "To Hades," he cried, "with your personal reminiscences. You've told me all that rigmarole a dozen times before. Get on with your story you glum-faced harbinger of ill. I'm sorry old comrade," he added contritely, "Your hand. Forgive my churlishness. I've had a lot of worries of late and my tongue runs away with me."

The Phœnician, never one to bear malice, gripped his hand cordially. "Euphorion," he said, wagging a bony forefinger at him in mock admonition. "How often have I exhorted you to bear in mind the Tyrian proverb. A sharp sword makes friends, a sharp tongue enemies? Not that your tongue is sharp for that matter. It is too rough to cut deep. But in any case our friendship

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is old enough to stand the strain of a few hasty words. For the rest, things are very likely not as bad as you think. I have taken the necessary measures, and the situation is well in hand."

"That's good news, but what exactly do you mean? you won't carry 'The Destroyer of Cities' on two elephants. It is impossible."

Maharbaal's black beady eyes swept the broken ground on the far side of the river. Ha! he exclaimed triumphantly, "I give Thee thanks, Almighty Melkarth. Euphorion," he continued, gripping his companion by the arm. "Do you mark that mass of dust a trifle to the left of the dark belt of trees?"

"I do. What is it? It looks to me like a long red caterpillar with a black head."

Maharbaal chuckled. "Don't you recognise the head? Why it's our two remaining elephants, Ossa and Pelion, harnessed in draught. My own invention."

"And the body of the caterpillar? Not pack-bullocks surely?"

"No, it's those war chariots we captured from the Cathæans. You remember you were for burning the lot, but it struck me they might come in useful some day. We just chopped the poles off a couple of dozen, lashed the bodies front to back in one long line, hoisted the ram on top, and harnessed in Ossa and Pelion. They didn't much care for the innovation at first, but they soon settled down."

Euphorion's broad face expanded in an appreciative grin, and a hand like a leg of mutton smote his henchman playfully between the shoulders. "By the Golden Wand of Hermes!" he cried gaily, "Maharbaal you're a wizard; and to think that a minute ago I was reviling you as I might a Jewish sutler."

The Phœnician smiled deprecatingly. "You must understand," he said, "that it is purely a makeshift. Now and then an axle breaks or a wheel crumples up. But chariots are cheap and that is easily rectified. By the way, one more thing while I think of it. You know we are very short of slaughter-cattle.

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Well I took the precaution of bringing along the elephant meat. It's all cut up and ready for issue. It will do one day's rations for the force, if not two."

Euphorion eyed him in amazement. "*Elephant* meat?" he echoed, "you don't propose surely to issue the troops with elephant meat. Why, there would be a mutiny. You'll be asking us next to devour human flesh like the Anthropophagi."

"Stuff and nonsense!" cried the Phœnician, indignantly snapping his long fingers under his companion's nose. "What's wrong with elephant meat? Its better than Indian beef anyhow. The feet are excellent; so is the trunk. Besides the troops won't know anything about it. I'll arrange matters with the Master Butcher. He owes me half a talent."

"I don't like the idea," grumbled Euphorion, still unconvinced.

"Anyhow, don't forget that officially I know nothing about it. However the meat will be bad by the time we get to Macedonian Headquarters so perhaps there's no harm done"

"Really Euphorion," rejoined Maharbaal tartly, "you seem to think that everyone in the Army is an epicure like yourself. We can't all feast on Karuke and Kandaulos* in the deserts of Asia. An empty belly takes what it can get and gives thanks to the gods. Besides, some of our people like their meat tasty. Those Bactriab Slingers for instance. Why, putrid camel-flesh seems to be their national dish."

"Then I may assume, I take it," replied Euphorion with heavy sarcasm, "that you are giving the Headquarter Mess an opportunity of sampling this rare delicacy?"

"Certainly I am," retorted the other stoutly. "I shall send Alexander one of the feet and instruct his cook how to bake it in clay. And mark me Euphorion, I'll wager you fifty Daric staters† that he'll be delighted with it. But come along, let us drink. My mouth is parched with this accursed Indian dust."

Euphorion blushed uncomfortably. He prided himself on his hospitality, and for a friend to drop in of an afternoon and find him without even a bowl of wine to offer, was black disgrace.

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* Lydian dishes much prized by epicures.

† A Persian coin then in currency throughout Western Asia.

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"I'm—I'm very sorry, Maharbaal," he stammered. "The fact is my last two jars of wine were broken on the march only this morning. If only—."

Maharbaal winked portentously. "Don't I know it?" he remarked jocularly, "why I could hear you shouting about it from where I was with the rear-guard. So fearing you might die of thirst, I came on ahead of the column to bring you a firkin of genuine Corinthian vintage, sent by my old mother all the way from Tyre. Also, as I know you're fond of them, a barrel of Sicilian olives pickled in brine. Come along, I've got them here on the river bank."

Euphorion stared at him as though his words were beyond his comprehension. "You're joking Maharbaal," he said at last smiling feebly.

"Joking?" repeated the other. "Do you think I'd joke about food and drink before you? No Euphorion, I have my faults but blasphemy is not of them."

But the shaft went wide, for Euphorion's thoughts were already dallying rapturously with the sweet heady wine and the crisp olives of Sicily. Silently, as though the occasion was too intense for words, he linked his arm in his comrades, and, turned in the direction of the river.

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MAP SPOTTING.

By Captain R. J. Wilkinson, O.B.E.

Having, in a previous article considered maps from the standpoint of the map maker, let us now consider the question from that of the user, and more particularly the military user.

The soldier is not, as a rule, either concerned with, or interested in, the troubles of the surveyor in his attempt to delineate the earth's spherical surface on a flat sheet of paper, but he is anxious that, when he uses a map he may be able to identify and indicate his position with the greatest possible accuracy. The proof of the map is in the using, and nothing delights the simple map reader so much as to be able to identify on the map the small under feature on which he happens to be standing.

Identification of position, however, is useless for military purposes unless the uses is able to indicate his position in a message or report. For this purpose we have what are known as map references.

The objects of a map reference are therefore,—

(*a*) To enable the map reader to indicate with accuracy on the map, the position of any point on the ground.

(*b*) To enable a person receiving a map reference to identify with accuracy and ease, the point referred to by the sender, so that, whether, it be a rendezvous or a target, the fault will not lie with the map if the man, shell or aerial bomb fails to arrive at the point indicated.

A map reference must be capable of easy and accurate telegraphic transmission and it should be independent of scale, and even of projection.

Mystery of Maps, *vide* "Journal of U. S. I. of India," for April 1924.

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Map references can be classified under two main heads:—

(*a*) Topographical.

(*b*) Pinpoint.

(*a*) means such an expression as "Crossroads 200 yards south of H. in Delhi on ¼ sheet 53/H."

(*b*) means a definite point measured in terms of its distance from a given origin.

Topographical references have few advantages and the following disadvantages:—

(*i*) Clumsy and inconvenient for signal transmission.

(*ii*) Liable to misinterpretation.

(*iii*) Confined to a particular edition of a particular sheet and scale.

(*iv*) It is not always easy to find a suitable reference point.

Pinpoint references are sub-divided into—

(*a*) Arbitrary.

(*b*) Computable.

An arbitrary reference is one which refers to a particular square on a particular sheet and must therefore include the map sheet No. or description, *e.g.*, square C.3. sheet 53 H/2.

Computable references enable the user to calculate, if he so desires, the distance and bearing between any two points, even though each point is on a different sheet. Computable references can be made, and usually are, independent of scale.

Computable references are either—

(*a*) Regional.

(*b*) Universal.

An example of a regional system of map referencing is the "French" Grid system described in Chapter VIII of the Manual of Map Reading and Field sketching. Founded as it is, on the fallacy that the earth is flat it can only be used in countries of restricted longitudinal extent. India could only be mapped on a rectangular grid by dividing it into belts of longitude, each about 6 degrees in width and each overlapping its next door neighbour

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by about 2 degrees in order to prevent sudden changes of reference. In the overlapped areas the map would therefore have two grids on it and the user perhaps in the heat of battle, would have to stop and work out which reference to use according to whether he was reporting to the eastward or to the westward.

In the previous article it was stated that the first step towards making a map was to plot the graticule or lines of latitude and longitude and that the relative positions of these lines depended on the form of projection. From this it will be obvious that the one constant factor in all maps irrespective of projection is the graticule, that is to say a given point, if described in terms of its latitude and longitude will always be traceable, irrespective of projection, sheet or scale.

Now a universal system of map referencing is one which covers the whole earth without overlap and independent of scale and projection. Such a system must, therefore, be based on the graticule.

As, however, map references in terms of degrees, minutes or seconds are too clumsy for ordinary use it is necessary to devise some means of simplification. The solution appears to lie in an adaptation of the Rectangular grid system described in Chapter VIII M.M.R. In this system the fundamental unit is a ten kilometre square which is sometimes modified to a ten-thousand yard square. Having once accustomed ourselves however, to the "ten unit square" notation the actual size of the unit becomes immaterial so long as it is definite and convenient. Therefore, why not use a "square" of ten minute side?

The average map user is not concerned with the size of the unit so long as the map reference is indisputable, therefore, the fact that the value of a minute of latitude and longitude varies with its latitude does not concern him. The more scientific branches of the Army such as the Royal Artillery who may be called on to calculate range and bearing, are one presumes, in possession of sufficient scientific knowledge to enable them to appreciate and cope with the changes of value.

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To the junior infantry and cavalry leader it makes no difference so long as a reference (say Q. 4654) on his map is the same on any other map and scale.

In the Minute grid system, which is based on the graticule, the country to be mapped is divided into areas measuring four degrees of longitude and four degrees of latitude.

In India, such an area is mapped on a scale of one to a million and is therefore conveniently referred to as a "Million sheet."

Each million sheet is divided into twenty-four "groups" each measuring sixty minutes by forty minutes; these groups are lettered A to Z omitting I and O.

Each group is subdivided into twenty-four ten minute quadrilaterals each of which is also lettered A to Z.

Each minute square is known by the co-ordinates in minutes of its south-west corner form the southwest corner of its parent ten minute square. The position of a point in a minute square is described in decimals of a minute, exactly in the manner laid down in the Manual of M.R. and F.S.

It can be seen, therefore, that for minor tactics a simple reference such as Q. 4654 is sufficient; the next ten minute square Q is 60 minutes (over sixty miles) east or west or 40 minutes (over forty miles) north or south.

If we desire to indicate a particular square Q in a large area it is only necessary to add the group letter—thus—H.Q. 4654. There is only one point in a million sheet which has this reference although there are twenty-four which can be described as Q. 4654.

The number of million sheets which be required to cover the earth's surface is 32,400 so that there will be that number of points answering to the reference W.Q. 4654 although each one is over two hundred and forty miles from the next.

At present only India and adjacent countries are covered by million sheets, and these are numbered; therefore, the reference 38 W.Q. 4654 fixes that point on the earth's surface because there

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is only one million sheet No. 38, only one group W. in million sheet 30 and one ten minute square Q in group W. The point itself is in minute square 45 and is 4·6 minutes east and 5·4 minutes north of the S.W. corner of square Q.

The size of a minute square varies with the latitude, that is the Easting or distance from West to East decreases and the Northing or distance from South to North, of a minute square, increases towards the poles.

In Indian latitudes the average size of a minute square may be taken as 1,700 yards Easting and 2,020 yards Northing. A four figure map reference, *e.g.*, Q. 4654 gives the position of a point within an area 170 × 202 yards while a six figure reference, *e.g.*, 462537 gives the position of the point within an area of 17 × 20 yards. As, however, the size of a pencil dot on a 1" to 1 mile map measures about 40 yards, it will be seen that a six figure reference on this scale is unplottable. Given sufficiently large scale maps, however, it should be possible to use not merely six figure but eight figure references which would fix points within areas of 2 × 2 yards.

The Minute grid system is being introduced in India for military use and the writer looks forward to the time when it will be no uncommon sight in Military Cantonments and Camps to see all sign posts, road junctions, bridges, railway crossings, etc., marked with the co-ordinate of their map reference. In time of war, it would be the duty of the Survey Company to fix similar notice boards behind the leading troops not only as a guide to those coming up from back areas, but to assist regimental and staff officers in describing points in their orders and reports and in fixing forward positions. The principal difficulty in some countries would of course be the tendency of the local inhabitants to steal the notice board for firewood!

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CORRESPONDENCE.

To

THE EDITOR,

U. S. I. JOURNAL.

"AGE AND EFFICIENCY." *

DEAR SIR,

I suppose it was bound to come. This suggestion that, because prolonged trench-warfare in Europe demanded activity and "guts" in the leaders of divisions and lower formations, therefore the age of commanders must be reduced everywhere and everywhen.

But the army wants something more than mere leaders-in-war and the next war will break all precedent if it at all like the war of 1914—18. Efficiency in war is, of course, the thing that matters most; the foundations of it are laid during long years of peace by organisation, by administration and by training. These processes, too, have their place in war.

Granted that, on the average, youth provides the best leaders of fighting formations, has not middle age better credentials for the business of producing efficiency?

Lieut.-Colonel Beauman says that "the retiring age-limits for officers are at present far too high to lead to the maximum of efficiency in war." But the present age-limits are those which existed in the years immediately preceding August 1914, the years which produced "French's contemptible little army" and that army has never been accused of inefficiency. Did any other army in the Great War get nearer to the maximum of efficiency than this first army of ours, which was trained by commanders whose ages might approximate to 55, 57 and 62 years respectively.

If not, then surely the acid test of war does not give "a most emphatic negative" to the desirability of retaining the pre-war retiring age-limits. Does it give a negative at all? Does it not rather suggest that there is not much wrong with the existing system?

* See Journal for April 1924.

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How many of the brilliant young leaders of 1918 are better qualified to prepare our army for war than the older leaders of 1924?

And what is meant by "War?" A repetition of 1914—18? Surely not. Here comes in pat a quotation from p. 230, immediately preceding Lieut.-Colonel Beauman's article:—"We must clear our minds; we must sit down and think hard. What does our army exist for? Certainly not for war on the scale of the Great War, nor yet for war on what used to be termed 'Continental scale.' It exists primarily to preserve law and order throughout the British Empire.....The British army exists for small wars and it is for the small war that we should train and for which our armaments, etc., should be adapted. Let us get back to the principles of 1914."

Lieut.-Colonel Beauman suggests a compromise,—a compromise, moreover, which will prevent our utilising many valuable "old" men for training, organisation and administration in peace but will not necessarily give us leaders of "the most suitable age" at the outbreak of war. Why change at all? War experience did not begin in 1914 and our pre-Great-War age-limits had, presumably, not been laid down at haphazard. Everybody knew that *in the field* a good young leader is better than a good old one when there is an excessive demand for activity of mind and body combined with staying power. Everybody had heard of Napoleon and Alexander the Great. Some people had also heard of the conqueror of Scinde. Perhaps, then, there is good reason for maintaining such retiring ages as Lieut.-Colonel 55, Colonel 57, Major-Genl. 62. Can it be this? that the present system ensures the utilisation of knowledge, experience and matured judgment to produce the perfect weapon while (as 1914-15 showed) it does not prevent the gradual substitution of "young" for "old" men to wield it, if the necessity arises.

It is worth while to regard the probable results of reducing age-limits from other points of view, too; *e.g.*, the probability of Sandhurst being empty and the pension-list over-full.

I enclose my card and am

yours truly

T. F.

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REVIEWS.

THE STORY OF THE EMPIRE.

By Sir Chrles Lucas.
(*Collins, 16s. net.*).

This is the second of a series of twelve volumes dealing with the British Empire, the separate titles of which are as follows :—

Vol. I. The Dominion and Dependencies of the Empire.
„ II. The Story of the Empire.
„ III. The Constitution, Administration and Laws of the Empire.
„ IV. The Resources of the Empire and their Development.
„ V. Health Problems of the Empire—Past, Present and Future.
„ VI. The Press and Communications of the Empire.
„ VII. The Trade, Commerce and Shipping of the Empire.
„ VIII. Makers of the Empire.
„ IX. The Native Races of the Empire.
„ X. The Universities and Educational System of the Empire.
„ XI. The Literature and Art of the Empire.
„ XII. Migration within the Empire.

This collection of volumes should prove valuable reading for officers studying for the Staff College, as well in Imperial Organisation as in certain of the optional subjects.

The volume under review is divided into five parts, each dealing with a definite period of British Imperial History. Part I tells the story from earliest times to the reign of Elizabeth while the remaining parts carry it on through the 17th, 18th, 19th and 20th centuries respectively, the latter up to 1923. It is, as the author states, an historical sketch "and attempts, by chronological divisions, each of which covers the whole Empire, to emphasise the cardinal fact of continuous expansion from an island into a commonwealth." Each part is sub-divided into numbered sections, a great convenience to students.

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INDIA : A BIRD'S-EYE VIEW.

By Lord Ronaldshay.

(*Constable*, 1924.)

The scope of Lord Ronaldshay's latest book is best described in his own words taken from the preface.

"The bird's-eye view which he requires is a mosaic of diverse pieces—a composition of historical, pictorial, statistical and ethnographical vignettes.

This then is what I have tried to do—to bring together vignettes of Indian history ; glimpses of Indian architecture and archæology; sketches of the social and industrial economy of her peoples; indications of the modes in which their religious thoughts has found expression ; illustrations of their unceasing war with their environment, particularly in the matter of climate and disease—to construct a mosaic which will present to the man who wishes to know something of this huge and varied land, whose recent history has been bound up so intimately with his own, an intelligible conspectus."

It is almost unnecessary to say that Lord Ronaldshay has produced a picture covering a wide field and yet remarkably accurate in detail. The reader, whether he be of the government, a business man, a clergyman or soldier will find in its pages a wealth of interesting subjects that closely concern himself. Statistics are used in confirmation of much that is stated without presenting them *ad nauseam*.

The North-West Frontier and its problems are dealt with in considerable detail and a strong case is made out for a forward policy. What Prince Gortchakoff wrote in 1864 of the obligations of a civilized power "to carry forward its own standard of life and impose order where confusion prevails, to introduce a reasoned system of justice when disputes are settled by unreasoning force" applies to-day with added emphasis to the North-West Frontier.

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In referring to the Sandeman policy Lord Ronaldshay has not mentioned the fact that, for many years we sat at the foot of the hills at Dera Gazi Khan and Jacobabad with large bodies of troops and brought peace and stability only when we moved forward and pacified Baluchistan from within. It is interesting to note that a forward policy has forced itself on the Russians, and on the French in Morocco and that the bulk of our troubles on the North-West Frontier of India have occurred when the backward policy has been most prominent.

While steering clear of the political situation that has arisen in India as a result of the Reforms scheme Lord Ronaldshay has dealt with India in a kindly spirit bringing to prominent notice facts, which cannot lightly be disregarded.

The book is well worth reading by everyone who has anything to do with India and the chapters on the North-West Frontier are specially recommended to military students.

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EGYPT AND THE ARMY.

By Lieut.-Colonel P. G. Elgood, C.M.G.

(*Oxford University Press*, 1924.)

In his preface the author indicates that his aim has been to show how and why Egypt threw off "the yoke of the British occupation." In doing so he deals mainly with events just prior to and during the war, and it follows that a considerable portion of the book is devoted to the military aspect of such events.

At the same time many questions of civil administration are also considered, and it is suggested that "Egypt and the Great War" would have been a more suitable title. For the military authorities were not alone in making mistakes in administration. This however is a minor point.

The main value of this interesting book to the military student lies in the fact that it brings out some of the many problems and difficulties which may confront a military commander in dealing with questions of civil administration in war, and the fact that the study of such problems and their solutions is an essential part of preparation for war in its widest sense.

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VICTORS AND VANQUISHED.

The New Balance of Power in Central and Southern Europe.

BY C. B. THOMSON (BRIG.-GENL. LORD THOMSON.)

(*Jonathan Cape Ltd.*, 4/6).

In the space of 124 pages the author has presented a highly interesting picture of the situation in Central and Southern Europe, and has also contrived to deal with the economic conditions in Germany in relation to the reparations question.

It is argued that, as a result of the peace which followed the great war, the peoples of the Balkans have been placed in a situation even more uncomfortable than that of the days of the war. If this be accepted as correct, it is probable, that a recourse to war, as a means of escaping from an intolerable peace, will follow.

With a view to destroying Germany economically and militarily France is blamed for imposing on the various states the obligation of contributing to a militarist policy, ill-suited to their present resources, which are unequal to carrying out economic reconstruction vital to their well being.

The characteristics of the several Balkan peoples are briefly but emphatically described—"The Bulgars have always been an exacting and even dangerous folk to rule. Few ministers escape a spell in prison and many prime ministers have met with violent deaths." "Several generals in the cabinet (of Bulgaria) profess military disdain for politicians and bring to their new duties all the valour of inexperience."

Lord Thomson, having an eye to the industrial stagnation in Great Britain and the vast annual expenditure involved in the unemployment dole, advocates a policy of making loans to the Balkan states as a means of furthering our commercial interests therein. It is hoped that our financiers may find sound reasons for accepting his advice.

The book is well worth reading and is recommended to candidates for the Staff College Examinations.

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TALES FROM TURKESTAN.

By Stor Lob.

(*Published by William Blackwood and Sons, Edinburgh and London*, 1924.)

The fact that most of these tales were published first in the pages of "Blackwood's Magazine" is a sufficient guarantee that they are interesting and well written, and therefore worth reading.

The title of the book is somewhat misleading, as only three out of the eight tales in the book have any connection with Turkestan. On picking up the book, one is intrigued by the author's nom-de-plume which appears to have some connection with the well-known character in Barrie's play "Dear Brutus."

The adventures so vividly described in the first tale, however, entitled "The Schooner and the Soviet," recall to one's mind similar exciting adventures recorded in the admirable book "On secret patrol in High Asia," by Major L. V. S. Blacker, O.B.E., which is one that should be read by every officer serving in India. We have little hesitation in attributing "Tales from Turkestan" to Major Blacker. The fact, as he states in his preface, that nearly all the stories are true, adds considerable interest to them. Those readers who had the valuable and interesting experience of serving in Turkestan during the Great War, will have little difficulty in recognising the names of those places camouflaged by the author. Xenia Dimitrievna, the heroine of the first tale, is a delightful character sketch of one of the many brave Russian ladies who cheerfully and without fear risked their lives in the struggle against the Red Terror.

The second tale, "The Counter Raiders," is a glimpse into the future development of the Air Force as regards the value of air operations in frontier warfare, and may be prophetic. This and the remaining tales are full of interest. Like all Messrs. Blackwood's publications the book is well printed and a useful map is pasted inside the cover.

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THE NAVY IN THE DARDANELLES CAMPAIGN.

By Admiral of the Fleet Lord Wester-Wemyess, G.C.B.

(*Hodder and Stoughton, London.*)

This book is a welcome addition to the literature at present available regarding the Dardanelles campaign. In the first place, in addition to a general account of the work actually done by the Navy, we obtain an insight into the administrative difficulties encountered by the author in establishing a base at Mudros. He stresses the fact that for some time no responsible military officer was appointed as Base Commandant, with a consequent lack of co-ordination, and appreciation on the part of the local military authorities of what was required in the way of preparations. His strictures on this point are no doubt fully justified, although the underlying cause is surely traceable to the fact that at the outset, the military portion of the enterprise was treated as a very limited liability, and it was not until the real significance and magnitude of the military operations was recognised that any improvement took place.

But the main value of the book to the student lies in Chapters XI and XII, which deal with the inception of the scheme, the position at the Admiralty and the position of the technical adviser. Lord Wester-Wemyess refers more than once to the fundamental error, the failure to appreciate that the operation must be a combined naval and military one from the outset and not a naval one assisted possibly by a small force.

It seems, however, that no clear "appreciation of the situation," in the technical sense, was presented to the War Council; it is doubtful if it was ever even prepared.

Finally, the truth of the dictum that "an intelligent appreciation of the other man's job is a first essential to successful co-operation" (Marshal Haig's Despatches) is fully borne out, and this applies with more and more force to the three services to-day.

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SPORT AND SERVICE IN ASSAM AND ELSEWHERE.

By Lt.-Col. Alban Wilson, D.S.O.

(*Hutchinson.*)

This is a pleasant, discursive, book, which—while it contains much that is trivial—is yet difficult to lay aside. The author is a sportsman and something of a student of his fellow-creatures, beast, bird and human. And a great part of his life has been spent in outlandish places. So he has all the material for a book of reminiscences. He makes full use of his material: so much so, indeed, that the narrative in places is spun a trifle thin.

The book is very much on the lines of these which another distinguished ex-officer of Gurkhas has recently produced with such success: it is an agreeable blend of family history, regimental anecdote, and sporting reminiscences—spiced with a dash of active service. The result, we repeat, makes pleasant reading. The general reader may find himself murmuring "*toujours* Gurkha," may find the humour of some of the anecdotes a little flat; the shikari may complain that, though he hears much of big game shooting indirectly, he seldom meets his author on a hunting day; the fisherman that, though he is told of rivers in plenty and of miraculous draughts of fishes that come out of them, he yet rarely sees his author at work. But, after all, it is given to few of us to wield the pen of a St. John or a Walton: classics are scarce. As a whole the book is fully as entertaining as are the bulk of such reminiscences. And the photographs are excellent.

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THE FIGHTING FORCES: A QUARTERLY FOR THE ROYAL NAVY, ARMY AND ROYAL AIR FORCE.

EDITED BY LIEUT.-COL. F. E. WHITTON, C.M.G., VOL. 1, NO. 2, JUNE 1924.

(Gale and Polden, 5s.)

The second number of this new quarterly magazine is excellent and fully up to the standard of the first.

For those interested in Air Power, "Airships and the Empire" will be found to contain a great deal of interesting information. The Burney Airship Scheme, essentially a commercial project for the economic development of the Empire, is dealt with in detail, and in the event of sanction by the Labour Government, a beginning is to be made by the construction of an airship capable of carrying 100 passengers and 10 tons of mail and accomplishing the Journey to India in 100 hours.

The Singapore controversy has brought the subject of naval bases again to the fore, and in an excellent article entitled "Some Aspects of Naval Bases" the whole problem is discussed in detail, especially from the point of view of oil fuel reserves.

Controversial subjects include an excellent article on the "Need for a combined War College," and "Military Policy and Organisation of the United States" and "The influence of James II on the Navy" will be found of historical interest. The "Cut in Pay" cannot fail to interest everyone, while those who are retiring or reverting will no doubt derive much comfort from "When the harness is unbuckled" which deals with the housing problem, and "On Dry Fly Fishing" will undoubtedly interest those who are contemplating leave.

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INDIAN MILITARY LAW.

By Lieut.-Col. S. T. Banning, C.B.E.

(Published by W. Thacker & Co., 2, Creed Lane, London, E.C.)

The author's name is already familiar to most officers who have had to pass examinations in military law as the author of "Military Law made easy" of which the 13th edition recently appeared.

The book is well arranged, easy to understand and is supplied with copious references. It is an excellent counterpart of Col. Banning's work on British military law, the general arrangement of the two books is the same, and officers of the Indian Army, particularly those working for Promotion and Retention examinations, who have long felt the want of such a work on Indian military law, should find it most useful.

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HORSE SENSE AND HORSEMANSHIP OF TO-DAY.

By Lieut.-Col. Geoffrey Brooke, D.S.O., M.C.

The real text of this wonderful and valuable book is the saying of Xenophon which the author quotes at the beginning of Chapter I, Part II. "It is surely becoming to young men to attend to the good management of themselves and the art of horsemanship." The author says that the same advice is truly applicable to the young men of to-day but, in this mechanical—and one might almost say hideous—age the modest restraint of the ancient's dictum surely requires emphasis by every possible means. This is really what the author has done and his whole treatise is truly an exhortation to the youth of to-day to recapture the joys of intimate association with that great friend of man,—the horse.

If we analyse further the quotation, we cannot fail to be impressed by the connection of "the good management of themselves" with "the art of horsemanship" for how can a man more fully "manage" himself and keep himself fit mentally and bodily than by association with the horse?

This book is wonderful because from cover to cover it is full of good meat easily digestible without a superfluous word. It is valuable, and indeed invaluable, because of its simplicity and sound advice and both Lord Cavan and Lord Wodehouse are probably perfectly right in saying that they would have derived great advantage had it been in their hands many years ago. True legitimate sport in reason and moderation is one of the soundest parts of education and what better medium for this is there than the horse? Geoffrey Brooke tells us how to judge him, how to buy him, how to train him, how to ride him and how to get the greatest pleasure and profit from him. Not merely pecuniary profit but educative and healthful profit. The book is invaluable to us in India and should be read and studied not only

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by every officer of the army but by every Englishman and Indian. India is the home of pigsticking and is virtually the birthplace of polo, two of the finest sports for making and maintaining the manhood of a nation, and it would be deplorable if she failed to hold her place. Times have changed and prices have risen but there is still scope and opportunity for young men in India to profit by the lessons of this book and train their horses and ponies with profit to themselves and the nation.

The defect of this rapid and mechanical age is the desire to "get there" by the royal or shortest road without counting the cost and, consequently, the tendency is to short circuit the business by acquiring the "made" animal or by having it "made" for one. Colonel Brooke's delightful pages and especially his hunt with Mr. X show the charm and joy of creation and production and Lord Wodehouse, in his introduction, hits the right nail on the head when he says that the shortage of first class polo ponies is partly due to the shortage of expert trainers. There is a wide field in India for the training of man and horse and with the increased production of horse flesh which will surely be brought about by the efforts of the National Horse Breeding and Show Society of India, there should be ample opportunities for all at a reasonable cost.

If asked to state briefly the main feature of this book we should say that it was contained in a portion of the title—"Horse Sense." That is just it. The author goes to the very root of the matter in telling you to get to understand your horse or pony and to get him to understand you.

The short Chapter VII "Prevention is better than cure" is full of sound advice and will be invaluable to the young owner while Chapter VIII and Chapter I, Part II, will be of great assistance to aspiring judges and buyers.

"The more knowledge a man possesses and the better he rides, the less his sport will cost him, and the more pleasure he will derive from horses." "There is always something more to learn."

The photographs are excellent and deserve careful study.

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THE RETENTION EXAMINATION AND HOW TO PASS II.

By Lieut.-Col. G. E. D. Mouat, D.S.O., Indian Army.

The object of this book, Col. Mouat tells us in his preface, is "primarily to assist officers in passing their retention examination and secondly as a vademecum for all British Officers of the Indian Army."

It cannot be admitted that the author has achieved his second object. The book contains many inaccuracies and is unreliable as a book of reference.

To the young officer working for his retention examination, on the other hand, this book will be useful provided that he checks the answers given with the regulations and corrects them where necessary. The book gives him a large number of questions of the type he may be asked and will serve as a test to his knowledge.

A few mistakes may be quoted in support of our charge of inaccuracy.

Page 6, answer 19 (*iii*), informs us that the Adjutant prepares officers' pay statements. This is not so. Officers' pay statements are prepared by the regimental accountant attached to the unit from the Military Accounts Department. No mention is made in the book of the Regimental Accountant or his duties. A serious omission.

On the same page, answer 19 (*iv*), the Adjutant is said to supervise and assist the training cadre in every unit. "Assist" is somewhat misleading in connection with an organisation for which the Adjutant is responsible.

On page 18, answer 53, we have a long account of the Indian Educational Corps. This corps has since been abolished. Similarly, on pages 87, 99, 93 and 96, the references to the Indian Educational Corps are now incorrect.

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MAPS PUBLISHED BY THE SURVEY OF INDIA

Are obtainable from the MAP RECORD AND ISSUE OFFICE, 13, WOOD STREET, CALCUTTA, on the PUBLIC SERVICE on cash payment or book transfer, and for PRIVATE USE on cash payment or V.-P. P.

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1. TOPOGRAPHICAL MAPS are published on the scale of 4 MILES TO 1 INCH, 2 MILES TO 1 INCH AND 1 MILE TO 1 INCH:—

(*a*) THOSE SURVEYED AFTER 1905 are printed in colours in sheets 23 INCHES × 19 INCHES, price ONE RUPEE per copy.

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(*c*) 4 miles to 1 inch maps are printed in two editions, *viz.*, LAYERED and POLITICAL, as described in para. 4, except those from old surveys, which are printed in black and styled PROVISIONAL, price ONE RUPEE per copy.

2. GEOGRAPHICAL MAPS are also obtainable as follows:—

(*a*) SOUTHERN ASIA SERIES, scale 1: 2,000,000 or nearly 32 miles, size 36 inches × 24 inches, price Rs. 2 per copy.

(*b*) INDIA AND ADJACENT COUNTRIES, scale 1 : 1,000,000 or nearly 16 miles to 1 inch in LAYERED and POLITICAL editions, and from old surveys as PROVISIONAL ISSUES; size 23 INCHES × 19 INCHES, price ONE RUPEE per copy.

(*c*) INTERNATIONAL MAP OF INDIA, scale 1 : 1,000,000 or nearly 16 miles to 1 inch in LAYERED edition (without shading of hills), size 30 inches × 26 inches, price ONE RUPEE per copy.

(*d*) GENERAL MAPS OF INDIA; scale 32 miles to 1 inch in sets of 12 sheets, each sheet 25 inches × 32 inches, in LAYERED and POLITICAL (without hills) editions, price Rs. 12 per set. Maps of India on various smaller scales and miscellaneous special maps illustrating Railways, &c., are also available.

3. MISCELLANEOUS maps are also published as below:—

(*a*) PROVINCIAL MAPS, on scales 16 miles and 32 miles to 1 inch.

(*b*) DISTRICT MAPS, on scales 4 miles and 8 miles to 1 inch.

(*c*) CANTONMENT AND TOWN MAPS AND OTHER MISCELLANEOUS MAPS, on various scales and prices.

(*d*) FOREST MAPS, obtainable only from the OFFICER IN CHARGE, FOREST MAP OFFICE, DEHRA DUN.

4. The styles of printing of 4 miles to one inch and Geographical maps are as follows:—

(*a*) LAYERED EDITION, printed in colours with contours and graduated layer tints to show altitudes and shading to emphasize the hills (Colour ribands along boundaries cannot be added to this edition).

(*b*) POLITICAL EDITION, printed in colours with colour ribands along boundaries, contours to show altitudes and shading to emphasize hills.

(*c*) PROVISIONAL ISSUE, generally printed in black or black with hills in brown. Colour ribands along boundaries are added by hand when required at an extra cost of 2 annas per sheet.

5. MAP CATALOGUES can be obtained at ONE RUPEE per copy.

6. Maps can be mounted on cloth and folded or mounted on rollers for hanging, &c., at a small extra charge.

7. The prices quoted for various maps are exclusive of postage and V.-P.P. charges. Any further information will be given free of charge on application to the MAP RECORD AND ISSUE OFFICE, 13, WOOD STREET, CALCUTTA.

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